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THE CONTENTS

Transistorised I.F. Amplification	3
Frequencies for Emergency Net Working	5
Amateur Television—Part Nine	6
Meet the Other Amateur and His Station—Ron Fisher, VK3OM	11
Correspondence	11
W.I.A. Federal President's Report	12
I.T.U. Fund Donations	14
Prediction Chart for Nov. '58	14
VHF	16
DX	17
SWL	18
Notes	19
Contest Calendar	19

EDITORIAL



"A LETTER TO THE AMATEURS OF AUSTRALIA"

Dear Fellow Amateurs,

I desire to place on record through the medium of this journal that subsequent to the request from the Wireless Institute of Australia, the Postmaster-General, Mr. C. W. Davidson, M.H.R., confirmed in a letter under date of the 1st September, 1958, that provision will be made for the inclusion of a Representative of the W.I.A. in the Australian Delegation to the Administrative Radio Conference to be held in Geneva from August, 1959.

I have had the opportunity of personally thanking Mr. Davidson and have confirmed this in writing on behalf of the Federal Council of the Institute and all Australian Amateurs.

It is indicative of the regard in which the Amateur Service is held that Mr. Davidson has seen fit to include an Amateur Representative in the delegation in the capacity of adviser-observer.

The Australian Amateur has no ulterior motive in seeking representation at Geneva. This desire stems from the fact that the forthcoming International Telecommunications Union Conference is convened at a crucial time in the history of communications, and our frequency bands, of which we have sacrificed portion at every past Conference, stand in jeopardy.

As an internationally recognised Service distinct from national domestic services, we have a very keen interest in the problems of frequency allocation on an equitable engineering basis in relation to our own limited channels in which we have to operate alongside hundreds of other stations in a channel-density-per-kilocycle unworkable under the conditions required by our commercial "big brothers".

All over the world today the Amateur is presenting his case for the retention of his existing channels of operation through his Government Administration with the united hope that his national worth in defence, his ability in technical employment

in Government and private enterprise, his proven value in emergency communication operations, and his ability to contribute a valuable asset to the world of electronics generally, will be reason for his Government to consider his small requirements in the frequency spectrum sufficiently important to be safeguarded against encroaching commercialism.

There will be many Amateurs at Geneva as observer-advisers with the official Delegations from their countries, and we are particularly proud that, for the first time, a representative for the Australian Amateur will be officially accredited with the Australian Delegation in an advisory capacity when matters affecting the Amateur Service are under discussion.

I am aware that all Amateurs are desirous of knowing who is to be the representative of the W.I.A. at Geneva. Until such time as the financial position is secure, it is considered unfair to approach a person and request him to negotiate leave of absence for the period of the Conference. Rest assured that you will be informed when this position is reached.

The Federal Council takes this opportunity of thanking all those Amateurs who have so willingly contributed to the fund organised by the W.I.A. to raise the necessary finance. With the fund standing over £1,500 after deducting expenses for printing, postage, etc., assurance from our sister Dominion—New Zealand—that the New Zealand Amateur Radio Transmitters Association have opened a fund in support of the W.I.A. and the expectation of contributions from other Region III. countries, the prospect of reaching the target figure of £2,500 is most heartening.

In conclusion, I appeal to all those Amateurs who are financially able and who have not yet contributed to the Fund to expedite their subscriptions to enable the Fund to be closed at the earliest possible date.

G. MAXWELL HULL, VK3NZ,
Federal President W.I.A.



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Transistorised I.F. Amplification

BY HANS J. ALBRECHT

THE application of transistors in i.f. strips requires some special consideration, particularly with regard to circuit economy. The selection of suitable types obviously cannot be done on lines known from valve technique, where practically any ordinary pentode is good enough for the purpose. It is well known that one of the important characteristics of transistors is their cut-off frequency beyond which they do not display amplification of any kind. On the other hand, costs of manufacture are often considerable for types with high cut-off frequencies. Thus it is a reasonable approach to choose transistor types according to the i.f. channels required. In addition, it may also be advisable to diverge from the channel frequencies generally utilised in tube technique, in order to make possible the use of transistors which are available at a lower price.

In consequence of what has just been outlined, a multi-conversion communication receiver, with fully transistorised i.f. strips, could use about 10 Mc. as first i.f., if the highest receiving range extends to the v.h.f. and about two megacycles per second if 30 Mc. is the highest frequency to be received. The second i.f., normally 455 Kc. in orthodox tube receivers, should be retained in that range. A third i.f. strip may be tuned to a frequency between 50 and 100 Kc. Such an i.f. channel allows the use of a low-priced category of normal alloy-junction triodes.

As is well known, transistors in the triode class display their best frequency response in the common-base connection. However, this type of configuration may necessitate special consideration in the arrangement of the bias supply. For this and other reasons, the common-emitter circuit is generally preferred. Table 1 gives, for popular triode transistors, approximate information on the order of magnitude of the limiting frequency for i.f. amplification. The figures are largely based on theoretical considerations and experimental tests made by the author. They can only be regarded as average data. Individual transistors may possess cut-off frequencies up to at least 30 per cent. higher than the value given as average value for the type concerned.

The behaviour of triode transistors is similar to that of triode tubes inasmuch as there is a natural tendency towards oscillation, provided the stage

gain is high. An efficient remedy is a neutralisation circuit arranged in such a way that undesirable coupling between output and input circuits is compensated in a fashion similar to that known from tube technique.

Considering the requirements of a triple-conversion communication receiver it is intended to describe in this article circuit details of i.f. strips on about 2 Mc. and 455 Kc. with various types of transistors. A transistorised Q5er or, in other words, a third i.f. strip on about 70 Kc. and appropriate audio output circuits shall soon be published within the framework of this series of the author's publications on transistorised communication receivers.

THE 2 Mc. I.F. STRIP

Depending upon the availability of modern transistors and their price, there are, presently, two popular categories of junction transistors for i.f. applications, namely the normal alloy-junction triode and the alloy-diffused-junction transistor. The use of the last mentioned type has obviously many advantages, because there is a considerable improvement of the characteristics governing the cut-off frequency. Assuming that, for this discussion, this type is represented by the recently developed OC170, its cut-off frequency in the optimum configuration is 70 Mc. On the other hand, the tendency towards excessive positive feedback through the internal capacitance is also reduced to a large extent. The interlead shield is normally connected to earth. Thus in cascaded tuned amplifiers or, in particular, in i.f. strips, this new junction transistor promises to be very useful indeed. In case transistors of this kind are not yet available on the Australian market, they should definitely be on their way to it.

Fig. 1 depicts the complete circuit diagram of an i.f. amplifier with two channels and the appropriate mixer stage. The first part of the figure illustrates an i.f. strip on 2 Mc. using two transistors of type OC170 in common-emitter connection. The correct impedance from stage to stage can be achieved by taps on either the inductance or the capacitance of the resonant circuits. To demonstrate how this can be done, the first resonant circuit is tapped on the inductance for correct matching to the mixer output impedance; in other words, this circuit represents the collector output circuit of the mixer which is not included in the circuit diagram. The capacitance of this circuit consists of two condensers in series with the centre being connected to the base of the first i.f. stage. The ratio of the two capacitances results in an impedance matching just as a tap on the coil.

For reasons of economy, certain triode transistors could also be considered for the 2 Mc. i.f. strip. The circuit would then take the form depicted in the second part of Fig. 1, which actually shows the second i.f. strip on 455 Kc. to be described further below. Again referring to Table 1, we are able to

select suitable transistor types at the desired circuit configuration. It can be found that, in common-emitter circuit, the OC44 permits i.f. amplification on 2 Mc., while with the common-base connection this type and the OC45 should result in satisfactory performance.

The resistances have been calculated to give a stability factor "S" corresponding to the requirements of tuned amplifiers, as already defined in the author's recent article in this journal. Thus $S = 2$, where "S" is given by the method described some time ago.¹ It may not be amiss to repeat here that

$$S = \frac{1 + \frac{R_a}{R_L} + \frac{R_a}{R_E}}{1 - a + \frac{R_a}{R_L} + \frac{R_a}{R_E}} \quad \dots (1)$$

where the resistors are denoted as in the first stage of the figure, "a" being the current amplification factor in the common-base circuit. It should be recalled that "S" is defined by the derivative of the collector current to the zero collector current in common-base configuration. The stability factor thus depending upon the common-base characteristics is also valid for the common-emitter connection, because this definition of stability is not affected by changing from one configuration to the other. In other words, a stability factor derived from data in the common-emitter connection is related to our stability factor by a constant. To work towards standardisation of design methods for transistor circuit, it is advantageous to use only one sort of stability factor, namely that shown once again in the above formula. All comments to circuit stability in this series of publications refer to this stability factor.

THE I.F.-MIXER

The two stages of the first i.f. strip are followed by a mixer with the output on 455 Kc. While an OC44 should be used in the actual mixer stage, the mixer oscillator may use an OC45. The oscillator circuit is very similar to that published some time ago in this journal.² Oscillator stabilisation is based on the author's method. With reference to one of his previous publications³ the value of "N", defined as the overall temperature coefficient of the oscillator frequency per degree Centigrade, is assumed to be 0.00025. This results in a variation of 0.62 Kc. per degree Centigrade at a frequency of 2455 Kc. According to formulae given in the publication just mentioned, we then find the necessary circuit coefficient as being approximately 0.5 parts in thousand. Taking into account the positive temperature coefficient of the coil, the method described before yields 600 negative TK units as the necessary temperature coefficient of the capacitance combination. This means that an ordinary ceramic condenser, having a temperature coefficient of a value between -700 and -800 TK units, should be connected in parallel

Type	Common Emitter	Common Base
OC44	2 Mc.	15 Mc.
OC45	1.5 Mc.	6 Mc.
OC70	50 Kc.	300 Kc.
OC71	40 Kc.	300 Kc.
OC72	45 Kc.	350 Kc.
OC73	80 Kc.	500 Kc.

Table 1.—Approximate values of cut-off frequencies.

to a capacitance with positive coefficient, e.g. a mica condenser. It is obvious that for accurate final adjustment of frequency an appropriate trimmer is required. Assuming a circuit inductance of $4 \mu\text{H}$ we find that, for 2,455 Mc., a total capacitance of 1,000 pF, in combination with a ceramic trimmer of about 30 pF, results in an oscillator on the correct frequency. This oscillator is coupled inductively to the mixer emitter by means of a link of a few turns on the oscillator coil, numbering about ten per cent. of the total number of turns required for $4 \mu\text{H}$. The coupling must be adjusted experimentally by varying the degree of coupling or by changing the number of turns of the link. The quiescent operating point of the mixer transistor OC44 is determined by the stabilising resistors, the emitter resistor being in series with the coupling link.

THE 455 Kc. LF. STRIP

This part of the circuit uses two transistor triodes in common-emitter circuit and another one in the best-frequency oscillator. According to Table 1, type OC48 is suitable for all three stages. Again, impedance matching is achieved by tape on one of the circuit components, in this case on the inductance. Here, as well as in the 2 Mc. strip, interstage coupling can be obtained inductively by h.f. transformers of the type normally used in transistorised equipment. In many cases, however, single resonant circuits with tape result in sufficiently good operation and are thus preferred because of simplicity of construction. Although division of the total winding into three parts for impedance match-

ing does not give optimum conditions, a good compromise can be obtained by this simple method. It is useful to use formers with adjustable cores. Alternatively, about 30 pF of the circuit capacitance could be replaced by a trimmer to allow accurate and final adjustment to resonance on the required if. frequency. This is also valid for the coils utilised in the 2 Mc. strip described above.

As mentioned in the introductory remarks, a neutralising arrangement, consisting of capacitance and resistance or a capacitance only, may have to be connected from one transistor base to that of the preceding stage, if oscillation on the if. frequency is observed. Although the entire circuit is designed for considerable stage gain, neutralisation should normally not be necessary but this may depend upon battery conditions and other factors.

The b.f.o. is an ordinary oscillator variable around 455 Kc. The range of variation should be approximately plus and minus five kilocycles per second, giving a total of ten kilocycles. A trimmer of 30 pF in parallel to the circuit capacitance of 330 pF plus stray capacitance and that of the transistor yield the above mentioned range of variation, together with an inductance of 0.33 μH . Here we may assume a value of 0.00015 for N, thus requiring a temperature coefficient of -400 TK units for stabilisation by means of the condenser. This value is obtained by a combination with a condenser of positive coefficient, similar to the system used in the mixer oscillator.

The output is connected to a tap one third above the cold end of the coil and thus gives suitable matching to another mixer, in other words the first

stage of the Q5er to follow. Alternatively, this output may be connected to a detector stage.

GENERAL PERFORMANCE

Concluding this description of a part of the transistorised communication receiver, it is useful to consider its performance in relation to the receiver as a whole. As has been indicated previously, the low frequency if. strip and the audio part are soon to be described under the heading of a transistorised Q5er. The actual r.f. part or the front-end of the receiver will also be dealt with in a separate article. The entire receiver is designed for absolute stability in all its sections. In order to allow a universal use of the receiver, all values are calculated for a six-volt supply. Four 1.5 volt dry cells in series or a six volt car battery can thus be utilised.

Of several possible methods of a.v.c. application in transistorised if. amplifiers, the following appears to be the best system, because circuit stability does not have to be jeopardised. Following rectification of the signal in the detector stage and appropriate amplification of the resulting d.c. signal, this is applied to a diode in parallel with one of the tuned circuits. Briefly, the amount of damping of this resonant circuit is then controlled by the strength of the signal. More details will be given later.

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- (1) Hans J. Albrecht, "Design Notes on Transistorized Oscillators and Amplifiers," "A.R." Vol. 25, No. 1 (1957).
- (2) Hans J. Albrecht, "A Transistorised Miniature Transmitter," "A.R." Vol. 25, No. 3 (1957).
- (3) Hans J. Albrecht, "Notes on the Frequency Stabilisation of Transistor Oscillators," "A.R." Vol. 25, No. 3 (1957).

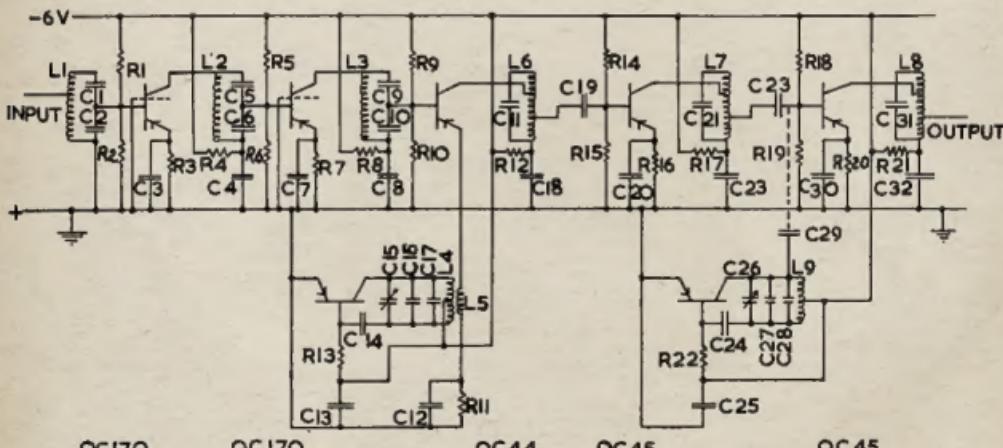


Fig. 1.—Transistorised LF. Amplifier of Multi-Conversion Receiver.

C1, C5, C9, C34—500 pF.

C2, C6, C10—3,000 pF.

C3, C4, C7, C11—50,000 pF.

C11, C14, C31—330 pF.

C12, C13, C18, C19, C30, C32, C23, C30, C32—30 pF.

C14—10 pF.

C15, C35—5-30 pF. trimmers.

C16—300 pF. (-300 TK)

C17—180 pF. (plus 80 TK micas)

C28—50,000 pF.

C27—50 pF. (-750 TK)

C29—30 pF. (plus 80 TK micas)

C30—Capacitance of two wires or fixed capacitor.

R1, R5—5,400 ohms, $\frac{1}{2}$ watt.

R2, R6, R12, R17, R21—1,000 ohms, $\frac{1}{2}$ watt.

R3, R7—600 ohms, $\frac{1}{2}$ watt.

R4, R8—150 ohms, $\frac{1}{2}$ watt.

R9, R10, R14, R15, R18, R19—6,000 ohms, $\frac{1}{2}$ watt.

R11, R13—100,000 ohms, $\frac{1}{2}$ watt.

L1, L2, L3—15 microhenry.

L4—1 microhenry.

L5—See text.

L6, L7, L8, L9—300 microhenry.

Frequencies for Emergency Net Working

BY J. A. GAZARD,* VK5JG

WHAT are the best frequencies for Emergency Networks working over short distances of up to 15 miles? Some Amateurs prefer the lowest frequencies available, those in the 3.5 Mc., but others claim that very high frequencies, such as 56 Mc., are best and give as examples the use by taxi and other mobile services of frequencies between 60 and 70 Mc.

Reference to text books gives no clear answer to the question but gives us the following relevant facts on radio propagation which will help to solve the problem.

Briefly, radio waves travel in four modes:

1. The Ground Wave—which travels along the surface of the earth and is vertically polarised.
2. The Space Wave—the direct wave which occurs when there are no obstructions between transmitter and receiver.
3. The Skywave which is reflected or refracted back from the ionosphere.
4. The Tropospheric and Ionospheric Scatter Wave.

The attenuation of the ground wave due to ground absorption increases rapidly with increase in frequency so that low frequencies are much better on the ground wave path. Over average country, it is unlikely that a 56 Mc. ground wave could be useful at more than five miles.

With the space wave, attenuation is due only to the wave spreading out with distance and therefore there is no difference between the propagation of the 3.5 Mc. and 56 Mc. signals.

Sky wave will occur only on rare occasions with 56 Mc. signals and even then 15 miles will almost certainly be inside the skip distance, but on 3.5 Mc. sky wave is effective although the waves are nearly vertical over short distances.

Tropospheric scatter wave can be neglected for the power and antennae commonly used in mobile working.

It would seem then that 3.5 Mc. is superior to 56 Mc. for ground wave and sky wave and equal on space wave. Other factors, however, must be taken into account. Taking first the space wave where attenuation is the same on both frequencies, we have to consider the antennae that can be used. As the space wave depends on a clear path between transmitter and receiver, the height of aerial is important and it is much easier to put the small 56 Mc. high up in the clear than the bulky 3.5 Mc. antenna of corresponding radiation efficiency. Also a 56 Mc. ground plane or beam antenna, which concentrates the signal in the horizontal plane, is easy to set up high but it is almost impossible to achieve the same results on 3.5 Mc.

Antennae suitable for 3.5 Mc. are the half wave horizontal and quarter wave grounded vertical which may be shortened by centre loading. The horizontal radiates an effective sky wave and

• The Publications Committee feels that the author has opened a most interesting subject and would be pleased to receive reports on experiences of those who have had experience with emergency networks. Reports of about 500 words, in a form suitable for publication, would be appreciated.
—Editor.

space wave but does not produce a good ground wave as this is vertically polarised. On the other hand, a vertical antenna, while producing effective ground and space waves, does not give the near vertical sky wave required for short distances. Neither of these two antennae can be considered suitable for mobile working and if the vertical is shortened down to whip size, its radiation efficiency is lowered considerably.

Therefore if the country is such that space wave is possible between transmitter and receiver, then because of the greater effective height and the horizontal concentration that can easily be obtained on 56 Mc., this frequency will be most effective. On the other hand, if obstructions such as a range of hills intervenes between transmitter and receiver, sky wave is necessary and 3.5 Mc. with horizontal antennae will be most effective.

There are other factors which also will influence the choice. One of these is the strong atmospheric noise (static)

that exists on 3.5 Mc. on occasions. It has been noticed that at times of heavy static a local 3.5 Mc. station is received better on a short untuned vertical wire than on a good high tuned half wave antenna. The reason for this would seem to be that the local signal is mostly space and ground wave while the static is sky wave. The horizontal antenna favours the static sky wave, while the vertical favours the signal ground wave, and thus the signal-to-noise ratio is better on the vertical antenna.

While these briefly are the theoretical considerations the best frequencies over any particular path can be determined only by actual test, but in testing all the above factors must be taken into account. For example, it is useless to compare both frequencies on one receiving antenna such as a six-foot whip.

One of the reasons why commercial mobiles use the 60-70 Mc. band is that as there are no long distance sky waves on these frequencies, the same frequencies can be used in different cities and States without causing interference.

Another band that might be considered for short distance emergency nets is 28-30 Mc. While 28 Mc. antennae are twice the size of those on 56 Mc., a quarter wave for whip or ground plane is still only eight feet long and there is a definite advantage in the simplification of gear. A 28 Mc. transmitter requires one less doubler than a 56 Mc. and most station receivers tune to the 28 Mc. band.

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AMATEUR TELEVISION

BY E. E. CORNELIUS,* VK6EC/T

PART NINE

TELEVISION TRANSMITTERS

Previous papers in this series have described specific equipment which has been tested and proved over a considerable period. In describing transmitters, the ground I will cover will be far less firm, and the discussion much more general.

A simple transmitter has been made up and performs satisfactorily. It needs a vestigial sideband filter to follow it, but I have had no success in designing such a filter for 300 Mc. that can be built and adjusted by an Amateur. The transmitter features are worthy of consideration, however, and while the transmission of the full lower sideband is out of band, and hence illegal, a discussion of the technique has point. If a linear final amplifier is added to follow the modulated stage, as in the vestigial sideband transmitter, the three tuned circuits on 295.2 Mc. may reduce the lower sideband adequately to comply with the regulations.

Thanks to the interest and help of John Stewart, VK1ZBS, who has suggested an alternative design with true v.s.b. characteristics, a transmitter for the 288-296 Mc. band is practicable for Amateur construction. This does not

involve any more complex circuits than a t.v. receiver r.f. and i.f. section, and will be discussed later.

The design of a video transmitter is not simply a wideband version of an a.m. sound transmitter. Several new considerations, unique to television, call for a different approach. These are:

1. A video bandwidth from 25 c.p.s. to 5 Mc., preclude all the more efficient methods of modulation.
2. The necessity for d.c. transmission, with an invariant black level requires special considerations in the modulator.
3. Vestigial sideband transmission (essential for 288-296 Mc.) calls for a rather unusual type of filter.
4. Video plus sound transmission requires two separate transmitters, but the subcarrier method can avoid this, and give worthwhile economy.

To consider the implications of wide bandwidth first, remembering that gain times bandwidth is more or less constant, it is important to realise that wherever the wide bandwidth is a factor, the power gain will be correspondingly low. This applies to the modulated stage, and to any linear stages which follow. An unsuspected trap is that even if the anode and/or screen is

modulated, the grid circuit must be wide band. Instantaneous grid current is a function of anode current, in a Class C stage, and if the anode current is varying at video rate, so will the grid current. To maintain adequate grid drive under all conditions of modulation, the grid circuit will therefore have to be wide band.

Happily, adequate circuit Q's at 200 Mc. are easy to obtain, in fact it is difficult to get the Q too high, but with undesired regeneration, this can occur.

Similarly, the antenna system must have adequate bandwidth, and for 5 Mc. video, multi-element Yagis have to be designed with care. In general, the greater the number of parasitic elements, the narrower the bandwidth. So for a specific antenna gain, it is better to have a number of driven elements, rather than the same gain from a parasitic array. The bandwidth of the transmitting antenna has to be noticeably wider than the 5 Mc. transmitted, as any restriction in bandwidth at this point, is as serious as the same lack of bandwidth in the video chain.

To maintain both bandwidth and gain, therefore, it is necessary to have a high proportion of driven elements. In commercial practice, no parasitic elements are used.

A video modulator must run Class A. The bandwidth of 25 c.p.s. to 5 Mc. makes the use of transformers, and hence Class AB or Class B circuits, impossible. Anode modulation of a Class C stage is therefore out of the question except at very low power levels, due to the inherent inefficiency of the Class A amplifier. T.v. transmitters are therefore normally grid modulated, but at the power level of those to be described, anode and screen modulation has been possible.

A Simple Transmitter

The first transmitter to be described is essentially similar to any a.m. sound transmitter, excepting insofar as d.c. and video transmission modifies the modulator, and the special techniques applicable to 300 Mc. See Fig. 43.

As outlined in Part 1, the vision carrier is on 290.25 Mc. This is crystal controlled by a 10.75 Mc. crystal. A tritet oscillator using a 6M5 (V1) triples

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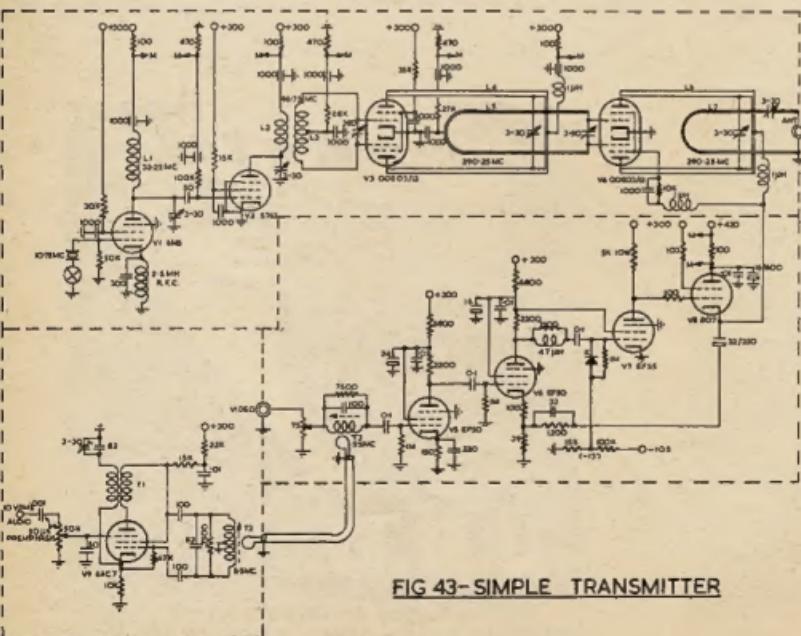


FIG 43-SIMPLE TRANSMITTER

in its anode circuit, providing 32.25 Mc. drive to V₂, a 5763 tripler to 98.75 Mc. This in turn drives V₃, a QQE03/12 tripling to carrier frequency of 290.25 Mc. A final QQE03/12 (V₄) is anode and screen modulated by the video modulator.

Video from the camera chain at the 1.4 volt p.p. level is taken to an EF50 (V₅) as a straight video amplifier and then to a feedback pair cathode follower V₆, V₇, V₈, using EF50, EF55 and 807. This last is essentially similar to the feedback circuits in camera and camera control, and designed on similar lines.

The 807 cathode follower is directly coupled to the anode and screen feed of the final stage, and provides adequate modulation. The 807 cathode swings between +260 and +60 volts for maximum modulation. D.c. restoration at the grid of the EF55 maintains d.c. transmission with black level set at about 70% modulation.

The linearity on negative peaks (white) is poor, causing white compression, but could be overcome by using a negative supply for the EF55 cathode circuit, enabling the anode, and hence the 807 grid and cathode, and QQE03/12 anode and screen to be driven down to near earth potential on white peaks.

Sound Channel

To avoid the necessity for two separate transmitters for sound, a 5.5 Mc. f.m. subcarrier is injected into the video modulator, which generates a sound carrier 5.5 Mc. above (and below) the picture carrier. A v.s.b. filter, if it had been practicable, would have removed the unwanted sound carrier below the picture carrier. However, the principle of multiplexing the sound on the vision channel is equally practicable in the second transmitter to be described, and will be discussed more fully in that context.

The transmitter, without filter, was tested on air, and provided a good signal over about three miles. Some 50 c.p.s. buzz was evident in the sound, due to d.c. restoration in the EF55 tending to clip the f.m. subcarrier on the sync. peaks. For anyone interested in a transmitter on these lines, coil details are as below:

L1—9 turns 16 B. & S. on $\frac{1}{2}$ " diam., 1" long.
 L2—5 turns 16 B. & S. on $\frac{1}{2}$ " diam., $\frac{3}{4}$ " long, close coupled to—
 L3—6 turns 16 B. & S. on $\frac{1}{2}$ " diam., $\frac{3}{4}$ " long.

L4—Lecher bars of $\frac{1}{2}$ " copper tubing at $\frac{1}{4}$ " centres, $\frac{3}{8}$ " long, shorted with 10 B. & S. copper wire. 3-30 pF. Philips' trimmer $\frac{1}{2}$ " from short.

L5—Lecher bars of shape shown in Fig. 43, at $\frac{1}{4}$ " centres, of $\frac{1}{2}$ " tube, $\frac{23}{32}$ " long. 3-30 pF. trimmer on grids. Bars about $\frac{1}{2}$ " below L4.

L6—as L4.

L7—as L5, 2" long, with 3-30 pF. trimmer in series. About $\frac{1}{2}$ " below L6.

T1—30 + 30 turns bifilar on $\frac{1}{2}$ " form, 40 B. & S. enamel.

T2—20 turns 36 B. & S. on $\frac{1}{2}$ " former with slug. Link 2 turns over centre of winding.

T3—as T2, link over cold end.

300 Mc. techniques apply to both transmitters and will be discussed in connection with the v.s.b. transmitter.

Sidechain Vestigial Sideband Transmitter

The block schematic in Fig. 44 will indicate the methods involved, in which the sideband shaping is done at a practicable frequency—29 Mc.—and this shaped response translated to carrier frequency.

The effective frequency multiplication in this case is 30 times, i.e. $3 \times (9 + 1)$, calling for a crystal on 9.675

the transmitter, late in the chain, minimising v.s.b. amplifier overload and enabling the v.s.b. filter to cut off before 34.525 Mc., the sound carrier frequency.

It also reduces the probability of multiples of 5.5 Mc. appearing on each side of the main carrier, due to non-linearity in the video and v.s.b. circuits. See circuit, Fig. 46.

As this is being written to meet the Editor's deadline, this transmitter is not complete, but the main problems were attacked in order of importance, and proved soluble. These were:—

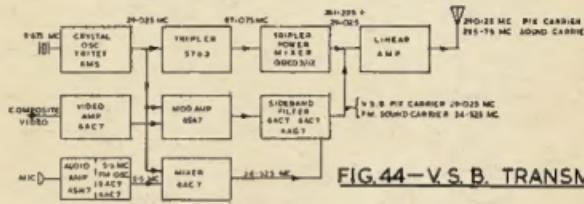


FIG. 44—V.S.B. TRANSMITTER

Mc. A tritron oscillator is used as before, a 5763 tripling to 29.025 Mc. This signal is used for three purposes.

1. To two tripler stages as before, using 5763 and QQE03/12 with output on 261.225 Mc. (This frequency never actually appears—see later.)
2. To a modulated amplifier using a 6SA7 where the 29.025 Mc. subcarrier is modulated linearly with picture information.
3. To an f.m. subcarrier system for the sound channel, to be discussed later.

The modulated carrier from (2) is double sideband a.m., with a carrier frequency of 29.025 Mc. This is fed to a sideband filter using standard receiver type if components to give a shaped response as shown in Fig. 45. This filter follows normal receiver techniques, and all tubes must operate Class A. The output of this is a standard v.s.b. signal, and is now translated in the modulated stage, by power mixing, with 281.225 Mc. to the carrier frequency of 29.025 Mc. The unwanted products of the mixer stage will be 29 and 58 Mc. below the wanted signal, and will effectively be rejected in following tuned circuits.

The Sound Channel

A two-stage audio amplifier lifts the microphone level sufficiently to enable a Miller tube modulator to frequency modulate an oscillator on 2.75 Mc. by ± 25 Kc., with good linearity. The oscillator doubles in its anode circuit to 5.5 Mc., with a deviation of ± 50 Kc., which is standard.

This 5.5 Mc. f.m. subcarrier is then mixed with the 29.025 Mc. sidechain signal to give an effective sound subcarrier at 34.525 Mc. This is re-injected into the main channel with the v.s.b. picture information, and is transmitted with it.

This method overcomes the sync. buzz effect noted in the first transmitter. Translation of the 5.5 Mc. to 34.525 Mc. enables injection back into

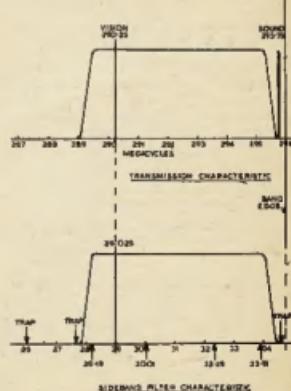
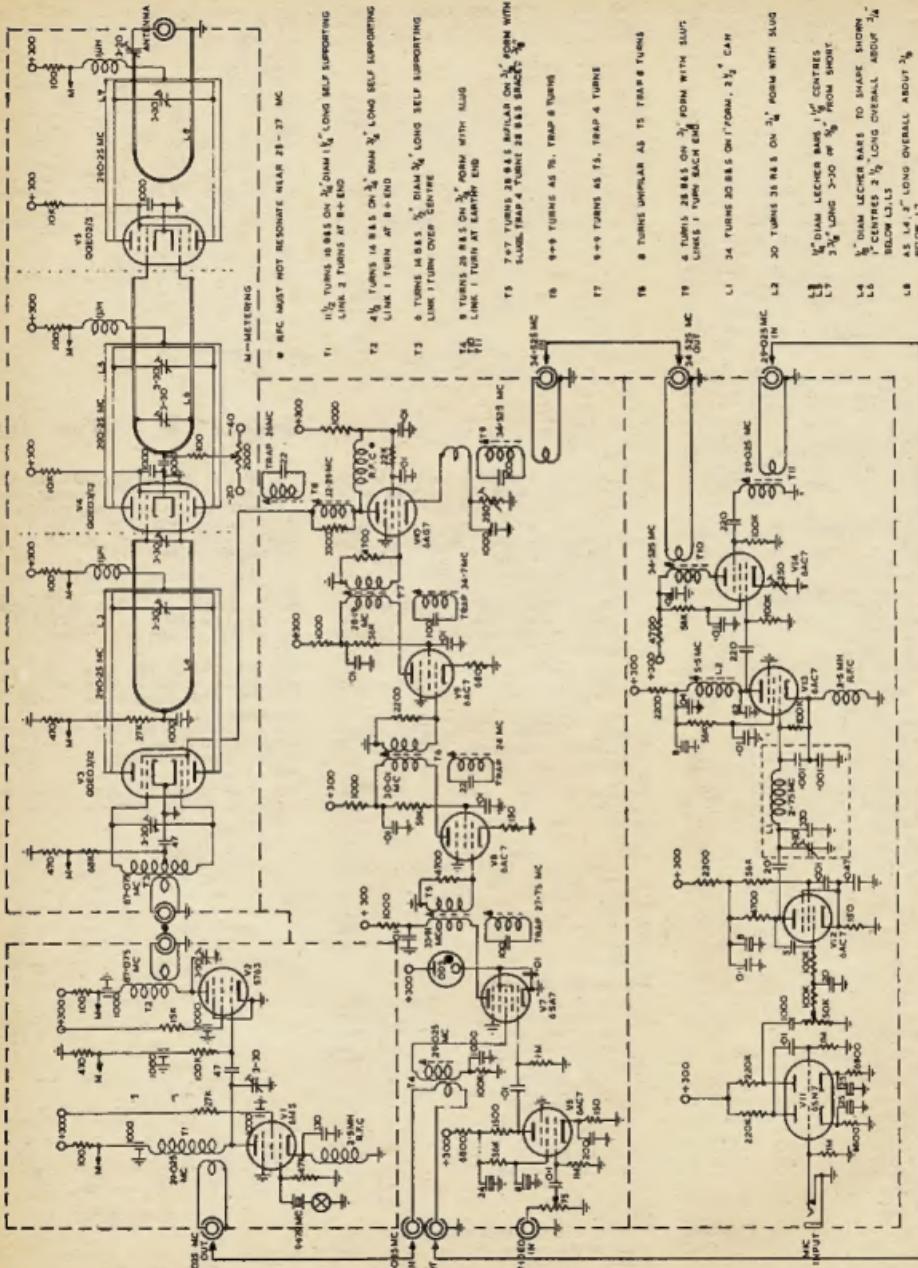


FIG. 45

FIG. 46.—VESTIGIAL SIDEBAND TRANSMITTER



centre frequency stability is more than good enough for Amateur operation. A discriminator circuit with a 5.5 Mc. crystal is quite simple, and will be incorporated in the future.

Power mixing at 300 Mc. is not an efficient process, particularly when the tube used, a QQE03/12, is running above its commercial frequency limits. Using grid modulation of the final, the available output is about 0.5 watt. Screen modulation of the tripler stage frees the final stage(s) for linear amplification.

NOTE—Fig. 46 shows an additional linear stage which should deliver 4-6 watts to the antenna feedline. This stage can be completely omitted with screen modulation of the tripler, but is necessary with grid modulation after the tripler.

As the final mixing is done at comparatively high level, it is worthwhile to consider the most efficient method possible. This is obviously plate and screen modulation, and now that the modulation band is 28 to 34 Mc., instead of 25 c.p.s. to 5 Mc., the use of a transformer is possible, and hence the use of a Class B modulator, single ended, or push-pull. A twin tetrode like the QQE03/12 should be ideal for this purpose, and will be tried in the near future.

In this system, the power mixer is effectively delivering a suppressed carrier single sideband signal, this signal being the new video and sound carriers, plus video and sound modulation components.

The suppressed carrier is, of course, on 281.225 Mc., and the unwanted sideband is the inverted t.v. channel generated between 233 and 238 Mc. These two products are effectively suppressed by the tuned circuits after modulation.

Assuming 60% realisable modulated stage conversion efficiency, with one sideband being one sixth of the total carrier plus sideband energy, the effective efficiency could not be more than 10%. But as the required sideband only is selected, the effective efficiency can be higher, up to 30%. With the QQE03/12 it will be rather less than this, with its 200 Mc. commercial frequency limit.

I suggest using a QQE02/5 as the final (linear) amplifier, as it has much higher efficiency at 300 Mc., and is capable of enough output to fully drive a QQE06/40, which can give 40 watts or better at 300 Mc. This is real power, and with an attainable antenna gain of 14 to 15 db, an e.r.p. of 1 kw. can be obtained.

The Circuit

V1 and V2 in the exciter deliver power at 29.025 Mc. to the side chain circuits, and at 87.075 Mc. to the main amplifier. Coil data is shown in the table. V3, the modulated tripler, has its anode circuit tuned to 290.25 Mc., which can only be done with both grid and screen excitation. For tuning to the correct sum frequency, a good calibrated wavemeter is essential. Using Lecher bar tuned circuits as shown, it is easy to tune to the wrong harmonic or frequency. The range of a 3-30 pF. trimmer will tune to both the second and third harmonics of 87.075, and with modulation there are several sig-

nals which will give resonance, namely 174, 203, 232, 261 and the desired 290 Mc.

The post modulation circuits should be tuned with picture carrier applied, then, if possible, with only sound carrier applied (295.75 Mc.), and then detuned approximately half way between them, to 292.5 Mc., to give a symmetrical band pass for all wanted components.

The use of a calibrated wavemeter here cannot be overstressed, as it has been found that with the tripler anode, and final grid, tuned to 261 Mc., it is still possible to get the final to give good output on 174 Mc.

For those not familiar with Lecher bar tuning, if the bar inductance, and tube and stray capacitance resonate at a frequency higher than desired, a trimmer capacitor at any point on the bar will bring it toward resonance. If the tube capacitance and bar resonate at a frequency lower than that desired, a trimmer at the tube end will, of course, make it resonate even lower in frequency, but a trimmer near the shorted end will act as a moveable shorting bar and will raise the frequency of resonance. Not a true short of course, and with the trimmer more than about 1" from the shorted end it is possible to tune that part of the bar toward the tube to one frequency present at the anode, and also tune the part between trimmer and short, to another component. This can be very disconcerting, when there are components every 29 Mc. An absorption wavemeter has proved good for identifying the frequencies to which parts of the bar are tuned. A g.d.o. should be even better.

V.S.B. Side Chain

The vestigial sideband filter consists of a Butterworth stagger tuned quadrupole, around a centre frequency of 31.15 Mc. The bifilar circuits are tuned to 33.91, 28.19, 32.28 and 30.01 Mc. Traps at 34.7 and 27.76 Mc. are to provide the sharp cut-off required at the filter edges, and traps at 26 and 24 Mc. are to ensure that the unwanted sideband is suppressed 20 db, or better.

Using receiver type if. transformers, either commercial or home-made, as described in "R. & H." for October '57, the design and lining up is essentially the same. A minor difference is that the pass band shape is rather easier to handle than in a receiver. The band edge traps are sharply tuned, high Q, and the 24 and 26 Mc. traps much broader. They are distributed such that the trap slot is not near the centre frequency of the associated transformer, which tends to distort its curve during line-up. The last tuned circuit is selected for low Q to give some band pass in the sound carrier region and its trap well away from that frequency. The broad tuning of the anode circuit avoids the possibility of grid circuit overload, for components on its skirts. The bias of each stage is arranged to avoid grid overload, except in the 6AG7 modulator, which draws some grid current, necessary to obtain sufficient voltage to modulate the QQE03/12 screen fully. The potentiometer in the 6AG7 cathode is for adjustment of optimum bias for maximum power output with minimum white compression.

The Sound Subcarrier Generator

The important requirement for this unit is its frequency stability. A Clapp oscillator circuit (V13) is used, with Miller tube reactance modulator (V12). As the percentage deviation is small, $\pm 1\%$, the oscillator tank can be reasonably high Q (low L/C ratio), and using silvered mica capacitors, the frequency drift is small enough to be neglected.

Doubling in the oscillator plate circuit helps to prevent interaction from the 5.5 Mc. and the 34.825 Mc. circuits from "pulling" the 2.750 Mc. oscillator circuit.

The heterodyne mixer V14 has two tuned circuits following it at 34.525 Mc. of high Q, to reject ride-through of the 5.5 Mc. carrier to the transmitter proper. Harmonics of 5.5 Mc. at 33.0 and 38.5 Mc. will also be rejected, so long as their amplitude is kept down by limiting the 5.5 Mc. drive to the grid of V14. Although not shown in Fig. 46, this is achieved by tapping down on L3 to a point where grid current does not flow.

The circuit shown, injecting 34.575 Mc. into the modulator cathode should provide adequate isolation of sound and vision. The 250 ohm potentiometer in V14 cathode is to control sound carrier amplitude.

Metering

Adequate supervision of the r.f. power circuits is necessary. Grid and plate meters, switched to the points marked M enable lining up to be effected reasonably simply. All tubes except the optional V5 have no fixed or cathode bias and lack of drive for a short period can cause damage due to excessive screen or anode dissipation. Leave the anode or screen supply open until adequate drive is obtained to provide protective grid bias.

LINING UP

Use a calibrated signal generator, or wobbulator, feeding direct to the outer grid of V1, with no video input, but fixed bias of -3 volts on the inner grid and a probe on the screen of V3. Line up the v.s.b. filter for optimum pass band. Detune the traps outside the bandpass while doing this. The damping resistor values are not final and will need to be varied to obtain optimum characteristics. Then tune the traps in T5 and T7 for band edge shaping and then the other two for 20 db. rejection, or better, of the unwanted sideband. The wobbulator or signal generator will need to cover 22 to 38 Mc.

Then apply 29.025 Mc. drive to V7 outer grid for ten volts grid leak bias on the outer grid and a 50 c.p.s. sine wave to the inner video grid, at about 10 volts p.p., or 1.4 volts p.p. to the video input jack.

A probe and c.r.o. on V3 screen will then show the demodulated envelope of the 29.025 Mc. carrier. Compression of white or black peaks will then be adjusted for minimum distortion. A probe check at the antenna terminal (into dummy load) should show the same condition. If not, the bias on the 290 Mc. Class B stage(s) must be adjusted.

The sound chain can be adjusted by injecting low level audio into the

(Continued on Page 11)

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Primary and secondary from 200 m.d. in steps of 100 m.d. Every winding individually tested at 2,000 volts to earth. Transformer fully potted with heavy copper shields.

PRICE £6/1/6
(Inc. Sales Tax)

Q-PLUS VERT. OUTPUT TRANSFORMER

Wax impregnated, eliminating acoustic hum and lamination vibration. Also gives protection against defects due to humidity. These units are tested at 2,000 volts to earth and are fully guaranteed.

PRICE £1/7/6
(Inc. Sales Tax)

"Q-PLUS" KITS ARE AVAILABLE NOW FROM ALL RADIO, T.V. DEALERS SPECIALISING IN KITS OR FROM THE MANUFACTURERS, WHO HAVE A SPECIAL QUERY SERVICE FOR ALL BUYERS.

Demonstration Kits may be seen in operation at these Addresses:-

R. W. STEANE & Co. Pty. Ltd. SYDNEY: 8 Cedow St., Pymble, NSW 3556
MELBOURNE: 2A Montrose St., Auburn, NSW 3377-8-9

MEET THE OTHER AMATEUR
AND HIS STATION

RON FISHER* VK3OM

A MATEUR Radio Station VK3OM is located at Wheelers Hill, approximately fifteen miles south east of Melbourne. This is a very good radio location, being about 500 feet above sea level, and one acre of land is available for antennae.

The shack is part of the living room, so comfortable operating is assured all the year round.

On the front left of the desk is a completely self-contained 40 metre phone transmitter. This has mainly been used as a mobile rig, but also to keep on the air during re-building. It has an 807 p.a. with 15 watts input, and KT61s as modulators.

The main transmitter, to the rear of this, runs 130 watts input on all bands from 80 to 10 metres. A Geolo drives parallel 6146s in the final. A pi network output is used here. The modulator uses 807s in Class B with a direct coupled 12AU7 as a driver. Speech line-up is a Larbor MD21 dynamic microphone.

* Station: Fairview Avenue, Wheelers Hill; Postal 758a Glenhuntly Rd., Glenhuntly, Vic.



phone to a 6AU6 pentode, 6AU8 triode and 6C4 driver. The r.f. and modulator units are together on the top deck, while the power supplies, control circuits and meters are on the bottom deck.

In the centre is a Heath Q multiplier which is used in conjunction with the receiver.

To the right is the Hallicrafters SX42 receiver. This has full coverage from

550 Kc. to 110 Mc. Used in conjunction with a crystal controlled converter for two metres, it gives full coverage of all the most used bands.

Three dipole antennae are being used at the present time, one for 80, one for 40 which also operates on 15, and one for 20 metres. A G4ZU beam is under construction.

Other hobbies are photography, both still and movie, and hi-fi reproduction.

CORRESPONDENCE

V S 2 D Q

Sungai Raya Estate,
Pulau Langkawi Islands,
Kedah, Malaysia.
9th Sept., 1958.

Editor "A.R." Dear Sir,

Would it please be possible for you to find space in your correspondence columns to let Australian Amateurs know the reason of the sudden disappearance of VS2DQ.

It was expected that I should next go on leave in 1959 and I had hoped it would be possible to visit your great Country. However, my leave has suddenly been put forward to this month and I have to go to England on business so I very much regret I will not have the opportunity of paying a personal call on some of the Australian Amateurs, perhaps it may be possible when the next leave comes.

Living in isolated location such as this, Amateur Radio is a real blessing and I have always particularly enjoyed the contacts with Australian stations. Over 500 VK stations have now been worked on phone and I am very grateful for the pleasant contacts, co-operation and encouragement I have been given.

All contacts should have been confirmed, but if QSL cards have gone astray then my address will be:-

J. C. Pershouse, GSKPY,
C/o Westminster Bank Ltd.,
Town Hall Square,
Bexhill-on-Sea,
Sussex, England.

I expect to return to Malaya in March 1959 and look forward to renewal of contacts with many Australian friends.

- J. C. Pershouse, VS2DQ.

AMATEUR TELEVISION

(Continued from Page 9)

microphone jack and monitoring the 5.5 Mc. output of L2 with a t.v. receiver discriminator. The final check will necessarily be "on air" with a t.v. receiver, using a converter, or one turret channel loaded with coils for 290 Mc. With the vision adjusted for optimum picture, reduce the receiver input till the picture is noisy. Then adjust sound carrier level till the receiver limiter is just beginning to lose control and noise is beginning to be evident. This gives optimum balance of the two signals.

V.H.F. TECHNIQUES

On 290 Mc. no liberties can be taken in layout, wiring, components, or bypassing. The circuit layout should be thoroughly designed on paper with a full scale sketch first. The chassis should be copper, brass or aluminium in that order. Wiring should be so short as to be practically invisible. Ceramic tube sockets are available from Philips for the double tetrodes and should be used. Bypass capacitors should be within $\frac{1}{2}$ " of the point to be bypassed and lead-through types used if possible, bead-type ceramics if not. I use lead-through capacitors for metering points and keep the metering leads above chassis. Each tube filament

should be bypassed at the socket. A shield across the tube socket(s) of the linear stage(s) is an advantage, the pin connections lending themselves to this.

Stray capacitance should be very low. Note this. A capacitance of 5 pF has a reactance of 120 ohms. To maintain 60 volts r.m.s. across this requires half an ampere of r.f. This happens to be the input capacitance, and drive requirements of the QQE63/12, so you will see the magnitude of the problem.

For the side chain, orthodox t.v. receiver techniques and components are ideal as the frequency and circuits are closely parallel.

ANTENNAE

I do not propose to describe a specific antenna. I suggest that resonant parasitic elements be shunned, but otherwise, choose your favourite. My first was a folded dipole with bazooka in a corner reflector - gain 12 db. My next is to be a 16 element driven array with a screen reflector, a mattress. At this frequency antennae are easy to design and construct, and the standard text books will do far better than I.

And here I finish this series, with thanks for the dozens of letters I have had already, and hope for more to come. This introduction to full-scale Amateur Television has been lengthy, but the field was wide. Now we need more specialised articles. Will you write them?

EARLY COPY

The closing date for copy for the January issue is 1st December.

W.I.A. FEDERAL PRESIDENT'S REPORT

It is my pleasure to present to you the annual report of Federal Executive for the period April 1957 to March 1958. There has been a steady program on many matters during the year, some of course included in the Minutes of the 24th Annual Convention of the W.I.A. Turning to the matters of major importance during the period under review, these are as follows:

FEDERAL CONVENTION

The meeting of the 24th Annual Federal Convention during the period 19th to 22nd April 1957, inclusive, was held in Melbourne and attended by thirteen delegates and members of Federal Executive. It was disappointing to all that the N.S.W. Division did not send a delegate as this was the first Convention held in three years and many important moves were discussed. In the final report, however, that, although not attending, the N.S.W. Council generously contributed to the Convention expenses. All Divisions have since this time received copies of the Convention Minutes and I must apologize for the lateness of their arrival which was due to the length of the proceedings and discussions. It was necessary to include much more of this matter than normal due to all Divisions not being represented and the following items 10, clauses of the Federal Constitution, 71 agenda items and 11 general business items were fully and completely discussed. The results of the ratification by Divisions of all items have not yet to date been received; therefore in most cases, meeting that Federal Executive cannot take any action. This is unsatisfactory because there remains a great deal of work for the coming year which should have been partly completed by now.

I.E.U. CONFERENCE

As an outcome of Convention item and on thorough consideration by Federal Executive it was decided that with the I.E.U. conference scheduled to commence in July 1958 some formative and pre-planning action must be taken by F.E. so that the W.I.A. would not have to take some action at the last minute.

After long discussions on the various aspects of this most important matter, your F.E. has now formulated a plan which has been notified to all Divisions and it is envisaged that another should receive an individual notice on the scheme to send an Amateur Delegate to the Conference. All Divisions, realising the importance of the Conference, are already giving the plan their support, which I trust will continue until the necessary funds are raised.

MEMBERSHIP

Although full figures from all Divisions are not available, it appears that membership is increasing, but only slowly. It is evident that all Divisions are making individual efforts to improve the membership by encouraging S.W.I. Groups to form and by making long-range plans that will not vary with each incoming Council. By taking such steps and subsequently making the best use of the services of available Amateurs for membership will automatically increase. All Divisions should endeavour to hold A.O.C.P. Classes which will also result in new members.

REGULATIONS

One of the major contributions to this aspect of Institute activities during the year has been the submission by F.E. to the P.M.G.'s Department of a revision of the Handbook for Operators of Amateur Stations. After consultation with the Department, F.E. has succeeded in all of their amendments being adopted and the new publication is understood to be at the print stage at present.

Most of the anomalies of the previous edition have now been resolved, resulting in what is considered to be a much more understandable document, with little chance of misinterpretation.

During discussions on the Handbook, opportunity was taken to ask the Department for further privileges and this has resulted in the release of more realistic means of pulse modulation to amateurs. Other considerations on which we hope to obtain some satisfaction in the near future are the use of the VK8 prefix and the novice license. The requirements of the Federal Convention, of course,

have still to be submitted, when ratified, to the Department for a decision.

Our relations with the Department have been of the most cordial and whilst not always obtaining what we desire, the members of F.E. are always welcomed to discuss and present the requests of the Federal Council for consideration.

THURSDAY

Due to the deliberations of the Convention, a more liberal allowance has been made by the Divisions to F.E. to conduct the Federal Policy of the Institute. The audited account and balance sheet of the Federal Executive are available here as an attachment to the Federal Treasurer. You will notice that action has been taken, as a result of the Convention, to open separate accounts for the various funds as required. Whilst the monies in hand are still available, the additional income granted F.E. will be of great assistance in maintaining F.E. on a workable financial basis.

PUBLICATIONS OF THE INSTITUTE

The Publications Committee of the Victorian Division, who are entrusted with the publications of "Amateur Radio" and the "Call Book", have again done an admirable job under difficult conditions as must always pertain when work is on a voluntary basis, with little thanks and plenty of criticism. The Federal Council agreed to the application to increase the price of "Amateur Radio" which has now been implemented. It is hoped that this increase will allow the magazine to be published without becoming a severe drain on the Victoria Division's funds. Consider the magazine will no doubt still find room for expansion but I seriously ask those in this category, "Are they doing anything themselves to help?" Do they send in articles for publication—are they in position to solicit advertising material? Could they produce a series of advertisements if they can answer yes to these three simple questions, I suggest they place their services at the disposal of the Publications Committee who will be glad to hear. Your Executive not being complacent in this matter, has endeavoured to crystallise a few ideas and at the appropriate time will present them for your comment.

The Call Book has maintained its original objectives whilst including new features and I thank all Divisions for the support they have

THE "MACRON" CRYSTAL TURNOVER PLAYER CARTRIDGE TYPE HF.11

Made in Australia to suit Australian conditions

by MACRON ELECTRONICS PROPRIETARY LIMITED, 54 High Street, Glen Iris, Victoria

LET US LOOK AT THE FACTS:



- ★ Clip-in insert. Can be replaced without removal of mounting bracket.
- ★ Half inch and centre mounting interchangeable with standard arms.
- ★ Robust construction with positive positioning for "Standard" and "Longplay" positions
- ★ Non-hygroscopic adhesives used throughout in the manufacture of the crystal element.

AGENTS: D. K. NORTHOVER
113 Murray Street, PERTH, W.A.

WEIK MULLER LTD.
8 Arthur Street, UNLEY, S.A.

Marketed by ZEPHYR PRODUCTS PTY. LTD., 58 HIGH STREET, GLEN IRIS, S.E.6, VICTORIA

JACOBY, MITCHELL & CO. PTY. LTD.
459 Kent Street, SYDNEY, N.S.W.

green, which has resulted in a yearly profit for this publication being maintained. I trust it will continue in this vein in the future, again with your support.

The magazine is the means of keeping our Federal structure—I ask all Councils to contribute in every way possible to its progress and improvement.

OVERSEAS SOCIETIES

As is usual, we have maintained contact with the I.A.R.U., the R.S.G.B., the A.R.R.L., the N.Z.A.R.T., and other overseas Amateur Radio Societies and Committees throughout the year and will also be able to obtain personal contact with the Federal Secretary, Mr. Douglas Howie, who is at present on an overseas trip. In this way, we hope to be able to present our representations to the I.A.R.U. and its aims and policies to societies who previously knew us by correspondence only. Mr. Howie will be attending a Regional Conference in Germany later this year to discuss the forthcoming World Conference. We hope he will be able to achieve much more this way than all the correspondence could do.

As mentioned in my last Annual Report, we made approaches to the Philippine Government through the Minister for External Affairs to allow their Amateurs to conduct contacts with UK Amateurs. I am very pleased to inform you all that in this matter we have been successful and can now legally communicate with them. Once again Amateur Radio has demonstrated how International are its boundaries within which friendship and amity are a symbol of goodwill.

CIVIL DEFENCE EMERGENCY NETWORK

This network has now been re-named the Wireless Institute Civil Emergency Network (W.I.C.E.N.) and the Federal Co-ordinator, Mr. George Glover, has devoted a great deal of time and enthusiasm to its establishment on an official basis. Applications for members of W.I.C.E.N. are now being printed, and firm rules and regulations for its operation have been promulgated. The promotion of this network is all important, the Institute for it to be a co-operation of all in International affairs. Its importance can therefore be not too strongly stressed, and all Divisions should continue to promote and support interest in it.

CONTESTS AND CERTIFICATES

The Contest Committee has once again continued their activities with zeal and have endeavoured to promote continued interest in all contests run by the Federal Council. A set of rules under which they operate have been circulated, and the main point still outstanding is to provide an equitable scoring method for the selection of the Remembrance Day Contest winners. The Federal Executive themselves have taken an interest in this matter and various statistics of past contests will soon be compiled for issue to all Divisions for future suggestions to maintain increasing interest in this popular contest. My personal thanks are reserved for the work of the Contest Committee, who I trust will continue in their capacity for yet another year of honorary service to the Institute.

MISCELLANEOUS MATTERS

With the support of members of the Federal Parliament, F.E. continued to press for a relaxation of the taxes on equipment sold for Amateur experimentation and use. As yet our representations have not borne fruit, but I trust that in the near future a satisfactory decision on our behalf will be made.

The news of the century—the successful launching of Russian and American satellites into orbit around the earth, found, as usual, the Radio Amateurs of the world well in the forefront in providing scientific information to the authorities and the W.I.A. as well as the rest in this regard and the Amateurs in UK will be well pleased about the job they did. A great deal of very satisfactory publicity was obtained, quite deservedly, and brought the service of the Amateur before the community at large.

I was very pleased to be able to make personal contact with some of the Divisions during the year, and thank them for their attention and hospitality during my visit. The use of tape recordings, too, I feel, has been the means of making the members of F.E. and the various Divisions and I know that means of contact will be continued by your incoming President.

Continued cordial relations have been conducted with the Service communication chiefs on whom we often look for support in our representations to the Authorities. The Police

Department and the D.C.A. Chiefs are also numbered among our supporters and it is particularly pleasing to have useful allies in these people who realise the worth and wealth of potential Amateur interests.

I am sorry to report that the loss or two of our F.E. members who have been forced to resign as a result of business. I refer to Bill Gronow (VK3SWG) and Bill Falconer (VK3JAWF) who have been great assets to F.E. with their wide and varied experience. Another member of staff has left, and I hope to find his replacement. I wish them both well and trust that an easing of business affairs will once again render their services available to F.E.

At this juncture I wish to record my personal thanks to Mr. Reg Jepson QSL Officer, Mr. Doug Pugh and latterly Mr. Reg Jepson as Traffic Officers, Mr. Gordon Weston as Awards Officer, and to the members of the Contest Committee, each and every one having given their best energies in an attempt to contribute to making my term as President more tenable and satisfying. I wish them all the best and trust they will carry on the good work for many more years in the same unselfish manner.

To all Divisional Federal Councillors and Councils, I also record my grateful thanks and know they will support the incoming President with the same wealth of advice and knowledge. I am also grateful to the members of Federal Executive who have given me their loyal support in my terms of office, no simple words of thanks can express my appreciation. I can only say in conclusion that Federal Executive are a team and as such are as strong as any single member. To me the team were premiers—I hope they have been to you also.

WILLIAM T. S. MITCHELL,
Federal President, W.I.A.

TREASURER'S REPORT

I have pleasure in presenting for your inspection the Financial Statement of your Executive for the year ended 28th February, 1958.

Your attention will be drawn to the surplus of income over expenditure contributed to

Accumulated Funds for the current year. This has been mainly brought about by the increase of per capita monies from 1/6 to 2/- per member, as authorised at the 1957 Convention.

The term "Convention Fund" represents the surplus in that account from the last Convention. This will be refunded to the Divisions on a pro-rata basis prior to the next Federal Convention.

The "Trust Fund" is a fund raised in result of a donation received and in anticipation of more to come, and will be utilised as thought best by your Executive.

Debts: This figure of £245/19/11 is almost solely represented by per capita monies from the Divisions outstanding at date of balance.

Stocks on hand have been reduced considerably in the intervening twelve months. This is mainly brought about by the directive of the 1957 Convention that all equipment is to be written off and in place thereof that asset "Equipment—VK3SWIA" to be raised. This is represented by equipment purchased ex Divisions, and paid equipment—Members—which although obtained very little equity in its present complete form, more equitably represented by the figure shown on the balance sheet at £18/12/-.

I would like to take this opportunity in thanking yourselves, and the members of the Federations, and in their case, Members, for the fiscal year just elapsed which has during the preceding the presenting of these accounts.

G. G. EWIN,
Federal Treasurer, W.I.A.

EARLY COPY

The closing date for copy for the January issue is 1st December.

WIRELESS INSTITUTE OF AUSTRALIA—FEDERAL EXECUTIVE BALANCE SHEET AS AT 28th FEBRUARY, 1958

Current Liabilities:		
Creditors	£21 3 7	
Convention Fund	£42 15 3	
Trust Fund	5 5 0	45 0 3
Accumulated Funds:		
Balance, 1/3/57	£246 16 8	
Add Surplus for year ended 28/2/58	118 7 6	567 3 9

Current Assets:		
Cash on hand	£8 0 0	
Commonwealth Savings	213 13 8	
Bank (Society A/C)	265 10 11	
Debtors	30 0 0	
Stocks on hand	3 16 0	
Prepayments	3 16 0	
Fixed Assets (at cost less depreciation):		
Filing Cabinet	£14 0 0	
Typewriter (No. 1)	34 0 0	
Trophy—Ross Hull	27 0 0	
Trophy—Remembrance Day	7 0 0	
Equipment—VK3SWIA	76 10 0	
		245 19 11

£567 3 9

INCOME AND EXPENDITURE ACCOUNT FOR YEAR ENDED 28th FEBRUARY, 1958

EXPENDITURE		
To Audit Fees	£19 10 0	
"	4 0 0	
Bank Charges	17 3 0	
Depreciation	26 3 0	
Entertainment	28 1 6	
Federal Contest Committee Expenses		
Lectures	15 1 8	
Postage and Telephone	10 17 5	
Printing and Stationery	16 4 2	
QSL Bureau Expenses	2 17 2	
Sundries	2 9 7	
Trophy Expenses	2 3 7	
Profit to Accumulated Funds	112 7 6	
		£245 19 0

INCOME		
By Per Capita Payments	£239 18 0	
Sale of Badges, Log Sheets and Sundries	9 17 0	

£245 18 0

We have examined the books and vouchers of the Wireless Institute of Australia (Federal Executive). In our opinion, the Balance Sheet is properly drawn up so as to exhibit a true and correct view of the state of the Federal Executive's affairs as at 28th February, 1958, and that the attached Income and Expenditure Account is properly drawn up to exhibit a true and correct view of the results for the year ended 28th February, 1958, according to the best of our knowledge and the explanations given to us, and as shown by the books. Stock on hand at 28th February, 1958, has been accepted on the certificate of the Secretary.

DAVID FELL & CO. Chartered Accountants (Aust.), 12th August, 1958.

"WILLIS" CHASSIS PUNCHES



1/4" 1" 1 1/4" 1 1/2" 1/2"

3/8" 21/8" 1-3/16" 35/-
1/2" 22/8" 1-1/4" 42/-
5/8" 22/8" 1-3/8" 47/-
11/16" 23/8" 1-1/2" 47/-
3/4" 24/8" 1-3/4" 57/-
1" 31/8" 2" 62/-
1-1/8" 33/8" 2" 62/-
Any special size requirements made to order

Q-MAX SCREW-TYPE CHASSIS CUTTERS

5/8" .. 25/7 1-3/8" .. 38/6
3/4" .. 26/7 1-1/2" .. 38/6
7/8" .. 29/4 1-3/4" .. 42/-
1" .. 34/10 2-3/32" .. 68/9
1-1/8" .. 34/10 2-1/2" .. 81/7
1-1/4" .. 34/10 1" Square 52/8
One key supplied with each cutter.
Spare keys 1/6 each.



LIST No P 540

MAINS CONNECTORS

Bulgin Type PT3, similar to illustration, Flash 8-Pin Plug and Socket. Ideal for any equipment. 7/6 each.

PI-COUPLED FOR HIGHER POWER

Compact, bandswitched, high power pi-coupler inductor for co-ax output. Rated for a max. 2,000v. d.c. at 800 mA. Input high voltage up to 10,000 v. a.c. a.s.b.

For max. efficiency the 10-metre coil is made of 1 mm. silver-plated strip, 15 and 20-metre coils of 1/8 in. silver-plated wire, and the 40 and 80-metre coils of 12 H. & N. copper wire.

Input capacity 150 pF. max. Output capacity 1,500 pF. max. A single pole five-position switch is provided which can be used for switching in parallel capacities as required.

Recommended input capacitor: Eddystone Type 817. Recommended output capacitor: Standard miniature 3-gang BC condenser which is suitable in this position up to 1 kw.

Price: £4/17/6 nett

GELOSO PI-COUPLED

Another winner for the Amateur. The answer to TVI and antenna lightning. Will match any antenna from 40 to 1,000 ohms over 80 to 10 metre Amateur bands.

Price (inc. tax): 31/6

SPECIAL HI-POWER PI-COUPLED CHOKE
150 watts, 35/-

I.T.U. FUND DONATIONS

Listed below are additional contributions to the above Fund to send a delegate to Geneva for the I.T.U. Conference in 1959. The editorial in this issue of the magazine should be read by all members—it should give you some idea of the reasons for sending a delegate to the Conference and may further encourage contributions from those who have so far forgotten to forward their £1.

Please send your donations in cheque, money order or postal note to:

Federal Secretary,
Box 2611W, G.F.O.,
Melbourne, C.I. Vic.

The following list is current to the 30th September, 1958:—

£1/10/0 W.I.A. Victorian Division, VK3SWL

£5/5/0 L. W. Louttit, VK3BZE, W.I.A. West Australian Division, VK3EWL

£4/4/0 M. H. Meyers, VK3BVN.

£2/2/0 R. G. Meadows, VK3ZIN, A. E. Barlow, VK3GQ; N. C. Seymour, VK3KZ; C. C. Eskins, VK3CN; R. H. Atkinson, VK3WZ; G. Clarke, N.S.W.; R. H. Kyle, N.S.W.

£2/0/0 W. H. Barber, VK3DX.

£1/10/0 D. F. Lloyd, VK2AQH; A. R. J. Topp, VK3AXT; T. R. Cuttle, VK3ZAT; R. Ema, VK3BRE; T. Mills, N.S.W.

£1/1/0 W. A. Paton, VK2VQ; A. H. Herald, VK3AJP; A. L. Berry-Porter, VK3KJ; J. Allard, VK3AKU; P. C. Lark, VK3FL; H. C. Wankel, VK3EXO; H. D. Spence, VK3IDS; N. C. Bell, N.S.W.; W. L. Grinshaw, N.S.W.; L. E. Hawken, N.S.W.

£1/0/0 L. Sparkes, VK3ZAC; J. Redman, VK3EJ; S. K. Burnett, VK3AKV; L. Wright, VK3AL; Mrs. M. Stanford, VK3KS; L. Stanford, VK3XH; J. Kling, VK3AJQ; G. Macfarlane, VK3AYM; J. Goodall, VK3ZBG; C. McNally, VK3EY; A. Harris, VK3AJ; D. Gilder, VK3CAB; McDonald, VK3DM; H. McLean, VK3DP; Cameron, VK3ME; G. Colley, VK3GZ; G. Weynon, VK3XU; J. McClelland, Vic.

O. Alder, VK3AJ; M. Power, VK4PM; R. Conroy, VK3AZ; S. Barber, VK3AB; T. Miles, VK3AF; V. KFZP; J. Bull, VK3AB.

H. Lloyd, VK3BC; F. Eastick, VK3AE (Northern Territory); L. McGrath, VK3GJ; J. Watts, VK3OM.

A. Lalwani, VK3AL; W. Moore, VK3BA; R. Everingham, VK3BO; B. Field, VK3BN; G. Yarkas, VK3CP; C. Cooke, VK3CP; E. Hodges, VK3EN; E. Cowles, VK3EJ; G. Malcolm, VK3EG; J. Cook, VK3JA; J. Godley, VK3JJ; R. Westbrook, VK3KO; L. Allen, VK3LA; D. McLean, VK3L; A. A. Allen, VK3LA; P. Murray, VK3LY; W. Odgers, VK3NT; R. Petersen, VK3PW; H. Sorley, VK3GR; R. Stiffold, VK3RS; W. Green, VK3WG; L. McGroarty, VK3WL; W. Morris, VK3WM; W. Watson, VK3WW; P. Wainfield, VK3XJ; C. Sri, VK3XJ; R. Crossell, VK3ZBR; A. Sowden, VK3ZSN; I. Stimson, W.A.; J. Milne, VK3AG; G. D'Emden, Tas.; J. Lee, Tas.

Under **£1/0/0**

L. McBarrigie, VK3YVG (10/-); B. Congdon, VK3GB (10/-); P. Fahey, VK3ZEP (3/-); M. McGinnis, VK3ZP (10/-); R. H. Hetherington, N.S.W. (10/-); L. Walter, N.S.W. (10/-); D. Heaton, Vic. (10/-); S.W.L. Group, W.A. (10/-).

Amendment to October List

Amend J. E. Mackie, VK3ZIN, to read J.

E. Mackie, VK3ZIN. Amend J. Hayward, Vic.

to read J. Hayward, Vic. (4/-).

The progressive total to the 30th

September, 1958, is £1,652/0/0.

PREDICTION CHART, NOV. '58

Mc. E. AUSTRALIA — W. EUROPE S.E.	Mc. E. AUSTRALIA — W. EUROPE S.E.
0 2 4 6 8 10 12 14 15 16 18 20 22 24	0 2 4 6 8 10 12 14 15 16 18 20 22 24
45	45
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21	21
14	14
7	7

Mc. E. AUSTRALIA — W. EUROPE L.R.	Mc. E. AUSTRALIA — W. EUROPE L.R.
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45	45
28	28
21	21
14	14
7	7

Mc. E. AUSTRALIA — MEDITERRANEAN	Mc. E. AUSTRALIA — MEDITERRANEAN
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21	21
14	14
7	7

Mc. E. AUSTRALIA — N.W. U.S.A.	Mc. E. AUSTRALIA — N.W. U.S.A.
0 2 4 6 8 10 12 14 15 16 18 20 22 24	0 2 4 6 8 10 12 14 15 16 18 20 22 24
45	45
28	28
21	21
14	14
7	7

Mc. E. AUSTRALIA — N.E. U.S.A. S.E.	Mc. E. AUSTRALIA — N.E. U.S.A. S.E.
0 2 4 6 8 10 12 14 15 16 18 20 22 24	0 2 4 6 8 10 12 14 15 16 18 20 22 24
45	45
28	28
21	21
14	14
7	7

Mc. E. AUSTRALIA — N.E. U.S.A. L.R.	Mc. E. AUSTRALIA — N.E. U.S.A. L.R.
0 2 4 6 8 10 12 14 15 16 18 20 22 24	0 2 4 6 8 10 12 14 15 16 18 20 22 24
45	45
28	28
21	21
14	14
7	7

Mc. E. AUSTRALIA — CENTRAL AMERICA	Mc. E. AUSTRALIA — CENTRAL AMERICA
0 2 4 6 8 10 12 14 15 16 18 20 22 24	0 2 4 6 8 10 12 14 15 16 18 20 22 24
45	45
28	28
21	21
14	14
7	7

Mc. E. AUSTRALIA — S. AFRICA	Mc. E. AUSTRALIA — S. AFRICA
0 2 3 4 5 8 10 12 14 15 16 18 20 22 24	0 2 3 4 5 8 10 12 14 15 16 18 20 22 24
45	45
28	28
21	21
14	14
7	7

Mc. E. AUSTRALIA — FAR EAST	Mc. E. AUSTRALIA — FAR EAST
0 2 4 6 8 10 12 14 15 16 18 20 22 24	0 2 4 6 8 10 12 14 15 16 18 20 22 24
45	45
28	28
21	21
14	14
7	7

Mc. E. AUSTRALIA — W. EUROPE	Mc. E. AUSTRALIA — W. EUROPE
0 2 4 6 8 10 12 14 15 16 18 20 22 24	0 2 4 6 8 10 12 14 15 16 18 20 22 24
45	45
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14	14
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Mc. E. AUSTRALIA — N.W. U.S.A.	Mc. E. AUSTRALIA — N.W. U.S.A.
0 2 4 6 8 10 12 14 15 16 18 20 22 24	0 2 4 6 8 10 12 14 15 16 18 20 22 24
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14	14
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Mc. E. AUSTRALIA — N.E. S.A.	Mc. E. AUSTRALIA — N.E. S.A.
0 2 4 6 8 10 12 14 15 16 18 20 22 24	0 2 4 6 8 10 12 14 15 16 18 20 22 24
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14	14
7	7

Mc. E. AUSTRALIA — S. AFRICA	Mc. E. AUSTRALIA — S. AFRICA
0 2 4 6 8 10 12 14 15 16 18 20 22 24	0 2 4 6 8 10 12 14 15 16 18 20 22 24
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Mc. E. AUSTRALIA — FAR EAST	Mc. E. AUSTRALIA — FAR EAST
0 2 4 6 8 10 12 14 15 16 18 20 22 24	0 2 4 6 8 10 12 14 15 16 18 20 22 24
45	45
28	28
21	21
14	14
7	7

PEOPLE WHO KNOW ...

THE PILOT

Ever since Icarus made the first attempt at flight, man has turned his eyes towards the heavens.

Today the sounds of man-made flight are a commonplace thing, and with ever increasing air power has come ever increasing responsibility to the thousands of passengers and air crew members who travel the airways daily.

The responsibility for maintaining strict air schedules and maximum safety during arrivals and departure at the various air terminals throughout the world, is largely handled by means of radio. Without radio many of the safety devices used daily at these air terminals would not exist.

Radio plays a major part in today's air travel, and the Australian valve most used in air to ground communication, is, of course, Radiotron.



CHOOSE RADIOTRON



RADIOTRON 5786

Used in Aviation
Distance Measuring Equipment.

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AMALGAMATED WIRELESS VALVE CO. PTY. LTD.

VHF

Frank P. O'Dwyer, VK3OF
108 Thomas Street,
Hampshire, Vic.

September saw some nice DX pulled out of the bag, possibly the most important being the reception on 2800 of VK3BIR's details to hand the working of K9S by VK4 and VK8, and the hearing of DULW and others in VK8. JA was worked consistently by VK4, S, 9 and northern VK3. VK8 enjoyed almost daily operating with commercial VOSK and Radio ZEAL, appearing frequently to 28 plus. Oct. 2 found the band open most of the day, F2 signals followed by T.E. in the evening around 1945 W.A.S.T. During this opening VK3-4 and 5 were all working JA. Once operating prior to this rare VK3 stations were appearing around 2130 and ending about 0130. Who went out, the JA's or the VK3s from tiredness?

Following the first hearing of JA4HM, Ss on Sept. 11 at 1945, heard by ZAJY, the VK3 gang followed up with a series of contacts. The first advised on 0015 E.A.S.T. then shortly after some to 28 plus, sounding like near locals; an hour later, they were still barking in. Several metropolitan stations made their first JA contact and many of the newcomers. During this time DX was still around with their low power in the QRM. Russ S9KX was on the ball when he suggested to the VK3 gang that they listen for JA signals around 7 or 8 a.m.; this followed on Russ hearing JA stations coming in during the evening of Sept. 15. From then there were no takes amongst the VK3 boys. The evening of Sat. Sept. 13, also found ZEBG listening to ZAJY, but he could not take advantage of it, being inoperable. Sept. 15, 0040 hrs., early bird ZEEN listened to numerous DX signs while bemoaning how they remained unidentified because of language difficulties. Several excellent Aurora appeared during the month but no Aurora DX was pulled despite calls to the south.

LOG BOOK.—The response to the request for log returns was good, is incorrect and is only approx 20 per cent of the known number operating during the year. Logs being processed by Jock ZZDG and his willing staff have come from ZEBG, ZAJA, ZARO, ZAKL, ZAJA, ZEAL, ZEAO, ZEAT, ZEBR, ZAHJ, ZALZ, ZOF, ZNO, 4ZAZ, ZGK, ZAKX, AZBP, ZAZZ, ZEAL, ZMK, ZMKX, 9NT. The log of Hughie SBC is believed to be in Melbourne also. Where are all the others? But up we fellows, do not delay any longer. Those who have not done this and are not by those who initially accepted the responsibility. If you are interested in 50 Mc. it is important that your name appears in the "log received" section. We wish to retain the frequency allocation of 50-54 Mc. throughout the year. It grows fine if 100 Mc. is given for it. If we do lose it, let us go down fighting. Should your log have been sent in and is not listed, let me know.

Lance LEAZ sends some interesting comments on VOSK and Radio Peking—3OF.

VOSK.—The Voice of South Korea, near Seoul, broadcasts news in English at 1815 hrs. E.A.S.T. and has been heard on the following frequencies: 48.6, 48.25, and 44.4 Mc. We are reasonably sure that these are spurious radiations from the transmitter on 11.5 Mc. There is no harmonic relationship and the station on 11.5 Mc is an AM. A beat parasitic in his final would produce it. If it is an authentic fundamental his deviation or modulation index varies a lot. I suspect he is almost pure AM at other times he is about 15% Kewpie. Further weight to the assumption that it is a bug is brought about by the fact that I have not been able to get any better copy off a wide band fm receiver which I borrowed for this purpose. I am sure I think it is a bug as a well known system of modulation known as "double sideband frequency shift-variable amplitude-intellegible frequency modulation" (developed on 1 Mc after years of research!).

East Asia 4ZAZ—Many would be fundamental on the 3rd harmonic of the 13 Mc. gen. inclined to favour the 3rd harmonic theory. Perfect a.m. on this signal. Raw carrier on 48.6 Mc. Seems to originate in Asia or Korea. In very strong winds he has little trouble with 190 Mc. As for 48 Mc. it is a cycle or so on each side of 48.8 Mc. Teletypes, the rest of the stuff comes from between 43 and 48 Mc. Is anybody's guess. Teletypes, f.m., a.m., unmod, freq shift keying, anything you like at times.—4ZAZ.

50 MEGACYCLES

A lot of v.h.f. operators may be wondering what is being done in the fight to keep the 50 Mc. band.

At the present time the VK3 v.h.f. Group is drafting an application for an extension of 50 Mc. occupancy to cover the year of International Geophysical Co-operation, i.e. next year. The principal arguments to be submitted will be that the present number of VKs number of VKs are making to P.R.F.; (2) 50 Mc. is unlikely to be used for V.T. for some time yet.

With reference to (1) a word of explanation is in order. P.R.F. (Propagation Research Project) is run by the A.E.R.L. under contract to the government. Its director is Mason F. Southworth, WIVLH. P.R.F. requires as many DX reports from 50 Mc. DX operators as one can get. VK at present is not too well represented in this work. This will be while project by sending a copy of your DX Log to A.E.R.L. Propagation Research Project, 820 Silas Drane Highway, Connecticut, U.S.A. In return you are forwarded copies of P.R.F. News which is issued twice monthly. DX also sends the official reporting forms which you fill in fortnightly. In order to justify our occupancy of the band during I.G.C. you will realize that VK should be well represented in P.R.F. VK will be the only country in the world to report on Aurora Australia.

The response to P.R.F.'s call for logs has been poor. So poor that this Group has been obliged to send out a letter to all dxers. Please treat this letter in the right spirit. Remember, it is the year 1958, in case for permanent retention of 50 Mc. as a band can be developed.

—VKALZE, for the VK3 V.H.F. Group.

NEW SOUTH WALES

This month we are pleased to report that the signal of Dave ZAWZ is now back on the air. It is hoped that you will soon be racing around in the little red car again Dave.

As expected, the lecture on and demonstration of oscilloscopes, given by Bob ZQZ, on 5th October, was a great success. Many brought along various types of "home-brew" scopes and those who attended left the meeting with a good deal more knowledge than they had before attending.

In VK2 we have been for some months developing a converter which has now been made available to members in a kit set form with complete detailed instructions for construction. The converter uses a 6BQ7A, a 6BL8 and a 13AT7 and has a noise figure of 7, which is very satisfactory. The converter is a very compact unit, available in the kit set form at its cost of \$6.

The monthly Mobile Fox Hunt in which John LANV assisted by Bob ZQZ was fox hunted out to be the usual exciting evening. There was a good attendance of hounds, the fox being first caught by Jim 2PM assisted by Phil 13EM. Tom 2PZ and Alan 13EL also helped three times, and Bob 2QD driven by John ZAYA, once. When the fox went to ground he was located first by Jim 2PM who dead-heated for first on the night's activities with Ron ZEBG with Wattlebank 12AD in second place.

Your scribbles for the past two months now dig out and you can expect a big improvement in next month's notes which will be written by Dave 2AWZ.

VICTORIA

• Meters.—I am sorry to say that this time of the year is very good and there is usually only one more station monitoring the band, most times. Perseverance had its just reward on the morning of Sunday, 30th Oct., when the first DX break-through for quite a few months occurred and Melbourne stations worked JA stations on the first part of an hour.

Quite a bit of the discussion is about the band conversion meter for the retention of 5 metres after the New Year and Jock ZZDG and Ian ZALZ have been burling the midnight oil in an effort to present a watertight case to present to P.R.F. As far as this is all work, the V.H.F. Group had an extraordinary meeting on Sat. 27th Sept. and a lengthy set of arguments was listed in favour of retention of the band. This list was read at the general meeting for October and a copy was forwarded to the Federal Councillor for V.H.F. Copies are

also being sent to all other interested parties, both in and out of VK.

Nineteen stations participated in the Sep. scramble, a record number to date, which was won by Jock ZZDG with 17 contacts.

Field Day. The first of the v.h.f. field days for 1958-59 is scheduled for November, although the date has not yet been finalized. This should be finalized at the October v.h.f. meeting and will be published on the SWI broadcast. Rules for the coming field day season appeared in Sept. "A.R."

2 Metres.—The winners of the first two metre scrambles were ZEED and ZFZA, and disappointingly the distance won was the size of our town-of-town vicinity and it is to be hoped that the scramble will not remain a Melbourne only affair. These scrambles are held from 1945-1955 hrs on the second Sunday of each month, so dust the cobwebs off that 2 metre gear and get ready.

V.H.F. Meeting.—The Sept. meeting consisted of a demonstration of noise figure comparison using a silicon diode noise generator by John ZEAL, and a demonstration of aluminium soldering by Bob ZEBG. Bob used one of the new type and contained portables, a cynosure and the circuit did not need welding rods, the joints were made quickly and deftly the efforts of the group to break them. Bob brought along a P.M.G. Research Laboratory report which showed that in general the joints formed have very good mechanical strength and are as strong as the joined metal. Using these soldering methods, Bob showed some very neat element clamps which were made from dural tube and some nuts and bolts.—ZEAL.

QUEENSLAND

DX! DX! Plenty of the stuff, lots and lots of JA stations, a few RDX and a lonely VK3 All the DX heard in the last month the power on the band being most popular. New VK calls heard on 50 Mc. in Brisbane are 4ZBY, 4ZBL and 4ZBN. 4HD still working all and sundry from the heights of Mt. Budina. Nice and strong. 4ZBZ and 4ZBZL are doing a thing of 34AJH on the date he said he would be in Brisbane, must have QSTed on the way. Yours truly (4WD) received the A.J.D. Award, No. 548, during the month of Sept. Card stated first time holder and the previous holder advised AZAS claim received 4NG ran into a heap of bad luck, his application sent early this year got LOST between Aust. and Japan. Bob's second application is on the way now. He now has all his QSLs for W.A.J.A. Award. Also received the A.J.D. and the Sunbeam Radio Club. Said there is no English on it.

Douglas 4ZCA is putting a signal on 50 Mc. soon, QTH west of Rockhampton. 4ZBF/4ZAB have been fixed mobile Mt. Coombah, said it is a good spot, but the noise only about 10 dB. Did you hear all the other stations? Allan? Bruce 4ZBD at new QTH, Clinton, working 4WD off a dipole on the picture rail in the room nice work.

V.H.F. Group working hard to retain 50 Mc. in the hope of getting long distance calls. Lance 4AHL was in town, contacted Jack 4JO or V.H.F. Group, driving 4NG and 4ZAZ heard in Brisbane, but did not hear the local gang calling them. We are all looking forward to working the VK3 gang again, especially of ZAJA. It will be great to be embarrassed by the old gang once again, hear you soon I hope. I nearly forgot to say that Lance had DX most of the month, from Flutty signs to 3999 plus, plus, plus.—4WD.

SOUTH AUSTRALIA

Very few v.h.f. enthusiasts operating on 50 Mc. at the moment. From this QTH only Bill SWR and Brian 5ZGT have been heard and they were crossband. George 5ZGA on 50 Mc.-144 Mc. still arrives around contacts with Warrnambool QSOs and a schoolboy at 2000 hrs. when Hughie is available. Brian 5ZBX, George 5CB, Reg 5SQ and Curt 5ZBL also on the band at odd times.

50 Mc.—Two new clubs to this band, Lance 5ZB and Bill 5ZBT using a four element yagi. John ZEUS is using a 5 Element. The final John ZEUS' rx at the moment is fairly broad, but hopes to have a selective rx shortly. Ken 5BR had testing on the band with a dummy load, last heard Ken about 3 years ago. Keith 5MT had a 1945 overdrive doubler to a 5781. Barry's YXL became his YXL on Saturday 4th. Congrats, old man. How lucky can you be?

(Continued on Page 18)

still as keen as ever. SAOM, have nothing specific of George this time; 3CX, who has completed his W.I. application and sent the cards down to the A.R.C. and the R.A.F. to S.A.M.E. to see what makes the VK2 boys tick. 4BW for some late information on the FNRAS deal; 4XJ now finding 23 Mc. coming to his liking. 4EW went to the trouble of sending in material from the D.F.T. Bureau to help him do his job. Ray. We would have had SWO in the list too, but skip took him out and brought VK3 and VK5 in instead at the critical time; 8VK, who is very interested in s.a. activities; 9XK with details on 40 Mc., and not to mention the 11s down so much. The s.w.l.s we have: WIA-L3601 keeping the VK2 S.W.L. Group on the ball, WIA-L2222 with a total of 133 countries tucked away, BEBS22 who raised some interest with receipt of the F.N.R.A.S. QSL, and WIA-L3602, 4XAL, Eric A. Thomas, who is now WIA-L3602, but QSLs studies, and René de Baisser who is happy with band conditions for Sept. We must not of course forget our overseas helpers, W4KVK and MASC1. 73 and don't forget the earlier deadline.

VHF

(Continued from Page 16)

many VKLs would allow radio on a honeymoon, and I wonder just how many contacts you'll have in VK7 Berry. Two more of the fraternity are Interstate at the moment. Graham S.A.G.A. made VK5 for months, and Al SE2Z made VK5 for a fortnight. Hopefully we will have some of those JAs follow. Hopefully Al now has a 65 ft. high mast for his 4 element. Hughie SBC reports hearing JA1IGV on 85 Mc. using v.h.f. haven't heard that station before. Well, we've got a few more to go. Reports received were heard by Ron BNTW on 8th at 9.15 a.m., the signal was in and out at 87 talking Jap. Reg QRQ has completed his table-topper. Bill Mc. using a Command keyer and the v.o.c. modulator was 100% intact and the rest rebuilt with a 252B in the final with 10w. input and phase modulation. Reg apparently has b.c.l. problems.

Rob ERG has left this land for VK5 where he hopes to become active on v.h.f.-32K where.

AMATEUR X.V.

The mention in the V.H.F. notes last month that one of the VK5 stations was interested in Amateur TV transmitting on 288 Mc. brought a quick response from Bill SBU. If Bill could find out who it was he would like to drop him a line because he is always on the lookout for equipment. He has joined the British Amateur TV Club and has received film strips and hopes to receive lecture tapes from them soon. Another Geelong Ham, JA8BK, is also active on a.t.v. and they hope to have a video QSL soon on 288 Mc. Then there's the "TV" DX with the Melbourne amateurs. Bill is endeavouring to contact others interested in a.t.v. and hopes with the W.L.A.'s help to exchange information with other enthusiasts and perhaps form a T.V. Group similar to the R.A.T. group. They can be heard on 288 Mc. 24 hours a day, most days of the week and can listen on all bands or play tape at 7w, 3½, 1½ singles or twin track if anyone would like to exchange tapes on a.t.v.

RADIO OFFICER or RADIO TECHNICIAN

Gilbert & Ellice Islands Colony Government invite applications from men, preferably ex-service, for the permanent post of Radio Officer or Radio Technician.

Emoluments Salary in Scale £A 1165 to EA 1619, entry in scale dependent on qualifications and experience.

Gratuity payable £A30 for each completed three months of service. Contract period initially three years, with option of permanent appointment.

Partly furnished accommodation provided at a nominal rental. Leave, five days for each completed month of service.

Qualifications: 1st or 2nd Class Commercial Operator's Certificate, minimum qualification, Broadcast Certificates with Morse to Amateur standard, knowledge of marine communications, R.F., V.H.F. communications and broadcast equipment, knowledge of marine radar installations advantageous.

Apply giving details of age, experience, qualifications and whether married to Agent, Agent.

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Ian J. Hunt, WIA-L3807
211 St. George Road,
Northcote, N.S.W., Vic.

This month we begin our notes by appealing for support for the magazine. If you have any hints and kinks, please forward them to the Editor.

Unfortunately I cannot include our feature S.W.L. of the Month in this issue as no one has provided me with the complete information. How about some of the VK3 gang telling us their history?

S.W.L. of the Month.—Only six cards were entered in this month's contest and Ian Hunt emerged as the winner with the card voting with a card from UBSPG. A card submitted from UA3KAE was a close second. Again I ask that other Groups participate in this section of our notes by running a contest of their own and advising us each month of the result.

With the exception of the DX section of our notes there is news in the DX section of PJ3AQ and ORAVN who may be well worth chasing. Now for our Interstate news.

NEW SOUTH WALES

Don Grantley again keeps this State on the map. He has made many preparations for the VK2 U.L. Contest and has come up with a good score. A holiday in Sydney will follow. He is contemplating a solution to the antenna problem by way of a GAZU beam, whilst a QSL and mobile receiving gear in the shape of modified Comptech 3000 are near market projects and the rest will be built with a 252B in the final with 10w. input and phase modulation. Reg apparently has b.c.l. problems.

Bob ERG has left this land for VK5 where he hopes to become active on v.h.f.-32K where.

VICTORIA

September Group meeting.—At this meeting 17 members were present. Two new members in Bill Gould, of Frankston, and Terry Knight of Nunawading, were welcomed. Reports received from members indicated the usual great interest in activities. One effort worthy of mention was the fact that one of our blind members, Fred Nolan, held VK2ZDC, VK2AL, and VK2ZAK on 6 Mc. using the t.v. rx at home. After general business was dispensed with, we were privileged to receive a talk from George SWJ on the subject of construction of Amateur medical units from scrap. George brought along his own well-designed and beautifully made rx as an example and held up as a model for almost two hours with a most interesting and instructive talk. It was one of the best talks the Group has heard. Many thanks to George for his time and trouble. We hope that you make complete recovery and you may rest assured that the best wishes of all s.w.l.s are extended to you. We hope that it's not too long before you are back with us at our meetings again as your usual cheery self.

His talk to us would also be a good rehearsal for a similar talk at a general meeting.

Ken Robertson, who attended the State Convention and played cunning on the Sunday morning to the extent of winning the 3 m.w. fox hunt. Don't let those city slickers into the secret of how, Ken. Years truly, together with Bob Wallace, from Bendigo, have put up the recently acquired J23 set and under the guidance of JVS managed quite a few contacts.

Querries about the VKA Group and a w.l. in general have been received from Ivan Richardson, 4XAL, from the U.S.A. and West Medelberg. Ivan uses an AR7 and Addison a 3-valve regen rx. We wish these boys luck in their s.w.l.ing and will provide answers to their queries as soon as possible.

QUEENSLAND

Jack Smith, of Westport, Brisbane, has dropped us a line and so we now know there are still some s.w.l.s up in the sunshine State. What's happened to all you chaps anyway? Let's hear more of you from now on. Jack hasn't said anything about his gear yet, but appears to have a great interest in seeking those rare QSLs.

SOUTH AUSTRALIA

A letter from Bob Simmonds, of Iron Knob, which I had misplaced has now come to light and I am reprinting it on your behalf. It reads as follows:

for the month. Bob and I will make up the total s.w.l. population of the town. They both have J186A 7w plus a 3-valve regen, and a Hartmann is the impressive lot of stations. This adds indicate an excellent location for Whyllies. QRM from the hill line from Whyllies. The B.H.F. Co. Ltd. generates the power for Iron Knob and Iron Barron at their large furnace in Whyllies. Jumps it as 35,000 volts to distribution in Iron Knob which then supplies 240v. to the town.

Bob includes a suggestion that the s.w.l.s could also get behind the L.T.U. Fund appeal. How about it chaps? I think it's a good idea and have noticed the names of quite a few associate members in the list published. You can send your donations to the headquarters of the Division in which you reside for forwarding to Federal Executive.

So with that in mind, finish these notes for yet another month. Before doing so, I would like to express sympathy on behalf of all s.w.l.s throughout Australia to Maurice Cox, the newly elected Secretary of the VK3 Group. As mentioned in last month's notes, Maurice is undergoing ill health and being police. We do hope sincerely Maurice that you make a complete recovery and you may rest assured that the best wishes of all s.w.l.s are extended to you. We hope that it's not too long before you are back with us at our meetings again as your usual cheery self.

EARLY COPY

The closing date for copy for the January issue is 1st December.

Duralumin Aluminium Alloy Tubing for Radio Aerials

★ LIGHT ★ STRONG ★ NON-CORROUSIVE

STOCKS NOW AVAILABLE FOR IMMEDIATE DELIVERY

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NOTES

FEDERAL

RETURN OF FEDERAL SECRETARY

The Federal Secretary, Doug. Bowie (2DU) returned to Australia from his overseas tour on Monday, October 21, 1958.

During his tour abroad, Doug visited many overseas Amateurs and had discussions with various Radio Societies, such as the R.S.G.B., and A.R.R.L. Doug also visited Moscow where he was entertained by the Moscow Amateur Radio Society.

Doug attended the Bad Godesberg Conference as the official W.L.A. representative.

More news and details of Doug's overseas tour will be made available when to hand.

OVERSEAS NOTES

United States. As from the 11th September, 1958, the American Amateurs have lost their 11 metre band. This band has now been allotted for use by medical equipment.

A.R.R.L. has submitted a proposal for the amendment of the existing regulations to extend full operating privileges to maritime operators extending between United States ports. This will allow operation on any band and not restricted as it is now.

Canada. The A.R.R.L. and C.W.C. Contest authorities conducted a number of power checks on Amateur Stations with the result that a number of well known Amateurs were recorded as using inputs in excess of the allowable 1 K.W.

Several Canadian Amateurs have had their license cancelled for varying periods of time, and in addition their names have been struck off the DXCC List by A.R.R.L.

Cayman. Recently news was received that 457 Amateurs have had their licenses cancelled. Since that time a number of unlicensed Amateurs have been abusing the authorities for their action with the result that the Government has directed that all transmitting equipment is to be seized.

L.G.Y. OBSERVATIONS

"Ghost Signals." Co-operation is being given by Amateurs in the observation of the "ghost signals" previously reported on Australian stations. This ghost signal or antipodal signal appears for about three to four minutes when the satellite is about half way round the world in respect to the observer and the signal again makes its appearance when its position is approximately one of eight.

CONTEST CALENDAR

Compiled by W.L.A. Fed. Contest Com.



"CQ" WORLD-WIDE:

Dates: C.W.—0200 GMT, Nov. 19, to 0200 Dec. 1.

Bands: All h.f. bands (including 11 m.). Rules: See "A.R.L." Dic. 42. (Note Rule 6, Sec. 6 and 7.)

R.S.G.B. TELEPHONY CONTEST

Dates: Nov. 22 and 23.

Bands: Restricted.

Rules: Same as for 1957 except for scoring bonus for working G8 stations.

ROSS HULL MEMORIAL V.H.F.:

Dates: 1st Dec., 1958, to 31st Jan., 1959.

Bands: All v.h.f. bands.

Rules: Same as for 1956-57.

Special Award for greatest distance over 3,000 miles.

NATIONAL FIELD DAY:

Dates: Probable January, 1959.

Bands: (1) H.F. (2) V.H.F.

Rules: As published Dec. 1958.

E.H.R.U.: C.W.

Dates: Probably January, 1959.

Rules: As for 1958.

OK DX CONTEST:

Dates: December, 1958.

Bands: All h.f. bands.

For those that are interested, they should listen either plus or minus 32 minutes from the time the satellite has made a close pass. Previous indications have been that the signal can be heard at better strength during the evening and has been observed on approximately 50 per cent. of the days that the satellite has been in orbit.

Great Britain. R.S.G.B.'s, I.G.Y. program of providing reports on propagation conditions has been carried out by some 60 G Amateurs.

The R.S.G.B. received no financial support in this project and the lack of finance limited their programs to some degree, however individual Amateurs co-operated fully and a wide field of observations were covered, some of these being:

Trans aural path propagation of h.f.

Iono-spheric propagation on 50 Mc. and the tropospheric propagation in the 70, 144 and 435 Mc. bands.

VALVES FOR EMMA

Queensland VK4 Amateurs may send their donations of valves to: Box 5381, G.P.O., Brisbane, Qld.

FEDERAL QSL BUREAU

Tom Lauder, VK3TL, hastens to correct an error which appeared in his letter leading to a note in this column in October "A.R.L." apropos the location of Northern Territory. Tom now says, "VK5AE is at Alice Springs, not Darwin. There are five or six listed stations in Darwin, but have no information as to their current activity." Tom expects to be writing from Reindeer in November.

The two main active F.F.I. stations nowadays are VR2EDA and VR2DG. The former is owned by Peter Alexander (ex-VK1PA), and the latter by Ben Pooley (ex-VEXTAFF). Ben works for P. & T. in Sydney and states he will be in VR2 for a further two years, and will be in charge of a further four years. Both stations QSL all contacts and reports. VR2DG uses only 15W, to a long wire on 14 Mc., while VR2DA uses 100W, on both 7 and 14 Mc. bands. Cards brought in by Ben "look a tumbler" during August and September, and a total of 1000 less each of the months mentioned.

Notes for this column have also declined, chiefly because my chief provider, Eric Trebil-cook, BERS185, was so overcome by the surprise and entirely unexpected victory of Colindale in the Victoria Foundation Cup Grand Final recently, it is rumoured that Eric had to receive first aid treatment at the ground and has not yet sufficiently recovered from his shock to enable him to read c.w. with accuracy or to put pen to paper.

—Ray Jones, VK3RJ, Manager.

NEW SOUTH WALES

The Sept. general meeting could have had a "house full," notice outside Science House, for the hall was filled to capacity. 130 members were required to seat the 130 members present. The Secretary read a letter of resignation from the Division's Treasurer, Ced Smith, VK3MCD. Ced advised he would no longer be able to carry on this important task on Council. We wish to thank him for the job he has done adequately for the last 12 months when he instituted new ideas in the financial side of the Division's activity.

Bob Luthe has been appointed to fill the position as Treasurer and has been co-opted as a full Council member.

New members continue to join the ranks, bringing the Division's strength to an all-time record of just under 1000.

The President, Pierce Head, read correspondence which had passed between Council and the Dept. of Education. Council has advised the Dept. of the training facilities available to students. The Dept. was interested in the courses run by the Division, both in lecture form in Sydney and the correspondence course available to persons who are unable to attend the lecture course.

Further business was suspended to allow members to listen to an excellent lecture by Michael Findlay, M.A., M.Sc., Ph.D., M.B.E. Mr. Findlay's lecture was well illustrated by slides showing circuits and diagrams of equipment suggested for this increasingly popular form of Amateur activity. A complete mobile installation was displayed, including a centre loaded 8 ft. whip antenna. At the October meeting John JU will lecture on stereophonic sound.

BUNTER BEANCE

The 1958 Hunter Branch Annual Dinner and Field Day are now history and the very successful dinner held for the first time since the

highlights proved that the promulgators were right. So look out for bigger, brighter and better things your way. It is purely coincidental that the Queen and we welcomed the guests. The latter was responded to by Clark, Alan, and myself. VK3LH, Minister for the Interior and Works, in proposing the toast to Amateur Radio and the Wireless Institute of Australia, gave many insights to contentious matters concerning us and if headed by all and sundry, it will be better for Amateur Radio. In this connection, I am sure that the War our ranks have only increased from some 2,000 to 5,500 and wondered what was the reason. Are we going out of our way to interest the young folk in our studies of the sciences and amateur radio? I would like to think so.

In the matter of the I.T.U. Alan is so far the best "arm twister" heard to date, yet even when Pop, Max ZOT, representing official W.I.L.A., responded in his usual manner.

The guest speaker, John 2TU, based his address on "Looking Ahead." No need to say much, John was received down the fact that he responded to poetry on a couple of occasions. Among matters he touched on in-

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cluded the advance of the transistor power from sunlight reaching interesting possibilities; increasing use of thermocouples to produce power; light amplifiers being the ultimate in V.T., stereo-sound, etc., etc. That concluded the session and the following are a few observations.

Several speakers praised the efforts of Social Sec. Gordon Sutherland and V.P. Stuart 2ZDF for the manner in which they did all the hard work and no doubt their XYLs will be pleased it is over for a year. Thanks boys for a job well done! 2JU emphasis that we must occupy the Convention Hall for the duration of the show, who follow us and to see that we use the latest techniques. 2ZDF's statement that it was due to 2CS that he became an Amateur (just imagine Lionel holding Alan's hand and concluding "I'm going to be a Hamster"). One notice from Roy Parker of VK3 expressing best wishes for the Convention.

The official table was composed of 3KBE, 3CS, 2JU, 2AUH, 2RU and 2PZ. Goford Zone was led by Major 2TRU Blue Mountains by Bob 2ASB V.H.F. Group by Jim 2ARL and from far afield came 2ABT and Ken 2EKS. The present included VK6 2AQH, 2AN4, 2QB, 2ANL, 2AWD, 2ZMO, 2ZDP, 2ZDL, 2XK, 2KB, 2OT, 2SF, 2ZL, 2RJ, 2ZK, 2APF, 2AHA, 2AKB, 2AFB, 2AJC, 2AJD, 2AJE, 2AJF, 2AJG, 2AJH, 2AJI, 2AJL, 2AJM, 2AJN, 2AJO, 2PK, 2CW, 2VJ, 2ART, 2ASA, 2AHT, 2KQ, 2PZ, 2AUH Messrs. Sutherland, Adams, Bailey, Davis, Jackson, McLachlan, Jayne, Rugg, Davey, Middledorp, Parry, Toohey, Nichol and Connors.

The field day was held on the Sunday but unfortunately we were unable to attend in the afternoon. No results will be in your next "A.R." Quite a crowd was present and there was spirited bidding for quite a few articles. Bill 2ZL nearly lost his ARS to the highest bidder. There were also some items from Murf SALA who seemed to be enjoying making new and old acquaintances.

Due to several circumstances caused by amanuensis by those concerned, we did not view the slides sent to us by Wal ZLIAUL/3 (VK9AXH) to you and a long promised treat bore fruit. Maybe I have a suspicious nature, but maybe the fact that the lecture was one of the most interesting of the afternoon and the turnout was purely a coincidence. Anyway, it is not behind us. Seriously though, Lionel did provide food for thought and there is no doubt as to his future, but I warn many a user that it would make just as much sense and not ex-s.a.s.t.b. A dummy load is still a good way to test any tx. The usual goodly crowd listened to Lionel and a visitor was Bruno Richter (from Austria, ex-OE1EPY). Gordon Sutherland, after the meeting, called on him and his immediate Eddie personally thanked our Branch President Lionel for the fine lecture he gave to a father and son night of the OE's at Blackalls Hill. Bill 2ZL took 2AQH as his son and this is the first time he has been associated. Max and Bob Lionel spoke of the early days of Radio and exhibited his four-page licence of 1922. 2ZL left his 1918 one at home, but brought his spark to me. I never mentioned it to him, but I do hope he will bring it along to lectures like these that new the seeds of Amateur Radio and helps build up the Institute.

Next meetings shape is the usual monthly one at Tighes Hill University of Technology at 8 p.m. on Nov. 14, and the usual social at Bill Hall's on 36th. See you.

VKS SOUTH WESTERN ZONE CONVENTION

A very successful South Western Zone Convention was held over the October holiday week-end, when over 100 attended at Canberra.

The Canberra Radio Society, who were hosts to the South Western Zone, are to be congratulated on their fine effort in organising the Convention. Deserving of special mention were Ken Finney, Ted Pearce, John Roberts, Eddie Penfold, and Les Pitt. Their efforts were great but I offer apologies for being unable to remember names. Thank you all for a job well done.

Our thanks go to Mr. Jim Fraser, Member for A.C.T., who officially opened the Convention, also to our Divisional President, Pierre Healy, who made the trip to our Convention to represent Council.

The Convention was well received by all as was the Amateur Hour and Films on Saturday evening, not forgetting the ("beaut.") dinner.

Sunday morning broke very wet, but this did not deter those who went in the scramble, and the 144 were there. The equipment auction went very well, all the bids and pieces being sold by auctioneer Ken Finney and his assistant, your scribe. There was some very nice gear on display in the home-brew section.

Sunday evening a Film night was held and supper served.

Results of competitions—Amateur Hour: 1st Jennifer and Barbara Weedon (highland dancing), Harry James (magician), 3rd Toni Simpson (violin). Scrabble: 1st 2RS, 2nd 2AVW, 3rd 2AOJ, 1st 2MC. Relay race: 1st 2AVW, 2nd year 1st Eddie Penfold (ham-fish), 2nd John Roberts (144 Mc Converter), 3rd D. Evans, Amco. (G.D.O.). Lady Travelling Longest Distance: Mrs. T. Simpson, from Griffith—2AJO.

VICTORIA

Quite a large part of the last meeting was given over to the Publications Committee for the purpose of explaining to members the why and wherefore of our monthly publication. As is to be expected, there is a considerable amount of work involved in producing our mag. and things are fast reaching the stage, so our Editor informed us, and he should know, where our organisation will have to sport itself a full-time Editor to co-ordinate

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the work. It is far too big as a spare-time job even now. The full Publications Committee was not on deck, but when you saw those that were and heard their stories, the Editor's prediction is really not an unfair fetch after all. With a dozen or so others the job is by far the biggest and I think he was not willing to admit it but the Technical Editor, Ken JAFF, runs a pretty close second. Anyway, I am stealing their thunder, so let's hear in a few short words what they had to say.

Ron HRA opened the proceedings by outlining the work of the committee and pointing out that this lecture coincided with the publication of the 25th anniversary issue of the mag. He also covered policy and organization and was supported in his remarks by very excellent slides provided by George JAHN and his son John JAZZ, who also operated the projector.

George JAHN, the Divisional Notes Editor, followed up with examples, both descriptive and pictorial, of how to copy a magazine. The Mag copy is written on half inch square sheets, is double spaced, has ample margin on either side, and has sheets numbered. The double spacing, etc., is to facilitate editing and then it is suggested that operators will have little room to start a larger sheet. The nearer we can approach the ideal the easier it is to turn copy into print and the cheaper the mag. is to produce. George showed us some slides of good and not-so-good copy received.

Following this Sid never stopped on the drafting angle which is his particular baby. Ron is rather snowed under with this job at the present time and would appreciate assistance from anyone who is adept with the pen and keyboard. He could do much quite a lot by submitting drawings in the printed form. Ron also had examples of the good and the bad to show us and it was easy to see where the troubles lie. Rather than try and explain what was required, I will just say that it would be better to pass on Men's advice that if you have an article to submit which is to be accompanied by drawings and are in doubt, then please don't hesitate to enquire as to proper direction of effort you can save the committee an awful lot of duplication of effort in re-drawing.

Next came Sid JASC, the book reviewer and collector of articles from overseas mags. Sid outlined his project. Sid's an exacting lad and involved him in a bit of running back and forth to the rooms for his tools of trade. With parking the way it is these days, his trip must be rather hazardous and could be costly if you don't watch out. Next time you're over there, review, remember Sid and be thankful because a lot of careful thought and much culling of magazines has gone into the selection of these articles. As his esteemed linguist would be handy on this job a quite number of the mags are in foreign language.

You're truly come next with a word or two on the compilation of the Victorian Division news and other little items about which Sid and I share. These latter are previews of the print and have to be corrected for machine errors and operator mistakes if any. The copy has been edited prior to us receiving the proofs. My biggest worry is

collecting news for the notes. I try to keep to topics of general interest and would appreciate any lit bits that may be forthcoming, but up to date very little dice. I take it from this that you are completely satisfied with results and that you don't read the notes. It's up to you if it's worth a change of material or scribe, so go to it.

Next we had the privilege of hearing from Australia's Oldest Man, George JACOM, who carried out the secretary duties associated with the committee's activities. George is quite a latecomer to Ham Radio as he didn't take out a ticket until well on in years. I suspect that his biggest incentive in making this move was the pleasure he derived from listening to the comments on the latest news. In between doing that and snaring that rare DX, he finds time to carry out his very important duties as scribe. Being a retired school teacher probably the reason why he was talked into the job and he does it with the touch of the expert.

Our Technical Editor, Distribution Manager and Finance Expert were also scheduled to speak but each was unavoidably detained and we didn't have the pleasure of hearing about their jobs.

The Editor summed up the proceedings by giving us a very small insight into his activities and dwelt particularly on the preparation of the special edition. This was prepared by George & Co. were used to assist and those assembled were left in no doubt about the work involved in this magazine producing business. At this stage dark horse was introduced by Ron, the person of Sid JAPL, the author of the article on the preparation of the special issue. He had his rx with him and proceeded to give a very commendable demonstration of its capabilities.

The proceedings were rounded off very fittingly by George JAHN with more slides one of which showed the committee hard at work over supper at one of its recent late sessions. Quite a lot of this hard work and late sessions will be appreciated. The above remarks should be relieved by further assistance, so what about some of you blokes with time on your hands coming forward.

It was hoped to have a discussion on the question of premises for the W.I.A. Victorian Division at this meeting, but after a long time away to a good start, things bogged down and time was getting short, so further time is to be found at a subsequent meeting, probably in October. In the meantime, if anyone can be resolved, the better, to make some arrangements to try them out on your fellows before the next discussion. The questions waiting to be answered are Do we or do we not need premises or do our existing ones fit yes, then how are we going to finance the move? What should these premises be located? What sort of building would be suitable? Who knows of anything available that might suit? If we continue to rent where do we go if we are forced to leave? Queen St. is suggested. Mrs. May she has quite a lot of business to conduct in the city on our behalf so we can't start thinking of the outskirts for rooms. Then the location must suit a majority of the members as to location, for instance. Parking is another consideration. There is very little time to settle these questions about six months to be precise so get those thinking caps on.

Jack ZEDZ squeezed a few words on the retention of the 50 Mc band into the few remaining minutes and went best to the post. New members admitted to the last two meetings were Full Member E. L. McCubbin 250, A. T. Gooby 30V, M. Dalton 3DF, M. G. Exall, JAGE J. Vale 3PZ, G. N. Kidson, JADG, H. W. Holtz ECR, W. H. Flemming 3EY, D. J. Hudson 2AT, R. E. Hobson, 3EZO, L. I. McInnes, JAMES A. Swindell 3EQ, ex-VSAS GRANK Associates R. L. Brewwood, R. G. Townsend, B. T. Mansbridge, T. R. Hayward, G. De Caux S. Loscynski, R. E. Gough, R. K. Turner, B. J. Turner, Jnr., F. L. Noil, M. W. T. Cherry (cont'd).

Our Federal Secretary has returned from overseas and has promised us he doesn't know yet! a lecture on his trip. It could be at the November meeting, so keep tuned to the Sunday morning broadcasts.

STATE CONVENTION

The week-end of the 20th and 21st September saw the State Convention of the Victorian Division take place in Melbourne. This was the first time in the last nine years that Melbourne has been the venue for the Convention and there was much speculation as to the success of the venture, but one cannot argue with figures and there was no doubt that not only was the Division and the Convention attended by as many as ever, as is the case for the year, but so also was the Sunday entertainment to commence activities all those attending gathered at a city hotel and after much chaffing

and many acquaintances being reviewed, sat down to dine. The President, Fred Hall, 3FD, welcomed all present, especially our guest of the evening, Mr. MAX HULL, 3ZS (Federal President), and Mrs. Hull, and the ladies who had accompanied members for the evening.

Jim JNZ proposed the toast of the Institute and David JADW responded on behalf of the Division. Max Hull then gave the opening address. Unfortunately he was quite ill in spite of going outside the dining hall, but undeterred, Max proceeded and spoke most ably and entertainingly on the various aspects of Institute life and in particular the I.T.U. Conference at Geneva. At the conclusion of this speech the ladies adjourned to the theatre or to watch tv, whichever was their choice, and members got down to the serious side of the Convention.

JVS declared the Night Convention open and received a donation from 3SAU and 3AVC, and welcomed all those convention members who had made the trip to Melbourne, these included K. Robertson associate, Graham 3QZ, David 3DV and Jim JACA, from the Eastern Zone; T. Ross, 3AFR from the Central Zone; SANC, Midland Zone, and from the South Western Zone came W. Wooley 3IC, W. Zimmer 3AWZ, J. Barber 3ZR, B. Bauch 3ZC and D. Bauer 3ZCX.

Much informal discussion took place during the evening and the members' views were adequately expressed and their recommendations will be dealt with by Council.

Disposals was one of the items dealt with and in discussion it appeared that this matter will be adequately handled, particularly in view of the limited amount of equipment offered in this State.

On the question of the call-up at the end of the Sunday morning Broadcast, as raised by the South Western Zone, it was stated that the Convention would be held in Melbourne subsequent to the Convention. The main difficulty is of course the high noise level in Queen Street, it is hoped that improved operator techniques will offset some of the difficulties of the call-up.

Perhaps the building fund was the most discussed item of the evening and many members spoke on the subject and no doubt there will be much more discussion in places other than the Convention. It is the hope that a definite answer to the problem is found. However the Secretary outlined the result of the Building Committee's inaugural meeting and stated that any proposal would be investigated within hours. It can be seen that there is a great deal more behind the scenes activity in this direction and many investigations have already taken place, but should anyone have a suitable building within the inner metropolitan area they could ring the Secretary MY 1087 and it will be investigated as stated.

Interference from tv. receivers was also discussed and this problem is to be referred to Federal Executive. Briefly that covers the main business dealt with during the evening. The meeting was declared closed shortly after 11 pm.

On Sunday the Convention continued with a barbecue picnic at Willemere Park and this was a great success with over 100 people paying approximately \$6 for lunch and over 100 for afternoon tea. The very unromantic weather which had preceded the Convention cleared and although a little damp under foot a full programme of activities was held. Much socializing was shown by a number of portable stations active on 7 Mc. In evidence was a number of 12's making their appearance no doubt as a result of a recent diapsis handout. In

W.I.A. VICTORIAN DIVISION



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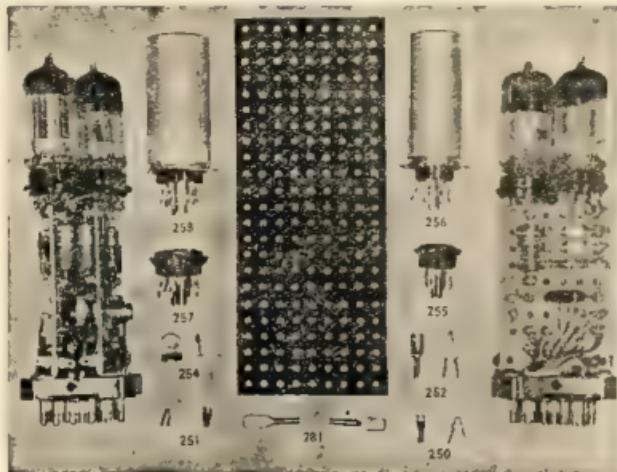
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the morning a two metre for hunt was held and was won by Maurice JONES. Ken Roberson from P.W. Albert, won 2 m. to represent and the 50 m. hunt was won by Bob JOHNSON. A new event held in VK3 for the first time was the blindfold tx hunt on 288 Mc. This was won by 3DQ's XYL, Mrs. Denoughue. (You have a choice, Cliff.) The trophy was a small effort. For the two awards were distributed and one might say that it was obvious from the foregoing that this year's State Convention was a huge success.

To the organisers we say thank you, particularly to our President, Jim ALLEN and our President, Fred SYKES. But most we say thanks to the members who supported us so wholeheartedly, and to the members who came with their XYLs and YLs from far afield. It was great to see them in the city. We were told that at one stage there were 38 cars with loops, antennae, etc. Perhaps this will be a forerunner of yet another Convention in Melbourne at a later date.

MIDLANDS ZONE

It is pleasing to note that the "regulars" are still attending the hook-ups on the second and fourth Tuesdays in each month, although for the last two your correspondent has been forced to keep a listening watch owing to re-building of the tx, modulator and v.v. During the recent holidays he had another listener, Tom Biggs of Haywood, who has passed his exams and waiting issue of a licence. One stalwart supporter of hook-ups has now departed, but with our best wishes for his future occupation, Peter COLE, who has returned from School Teaching to enter a electronics division of an overseas manufacturer, who has sent him on a world tour, commencing in the U.S.A., thence through Europe, England and other interesting parts dear to the heart of VK3.

Another member of the Zone is also going on a world tour next year in connection with his occupation as City Engineer of Bendigo-Rex SOUTER, who will be going on a tour very similar to the one just completed, but to more similar of the friends he has made overseas. Rex is an extremely capable man in his chosen profession, and will doubtless make the most of the trip from this angle and from his hobby, which remains a great interest and will stick these days in the process of work.

Col IFCO has been active on 2 m. lately, but hopes to get to 80 m. soon for the forthcoming chatter. My spies advise that Maldon has the highest density of tvs. per head of population for any country district. This may be the reason for the lack of suitable signals from Maldon.

MOORABBIN AND DISTRICT RADIO CLUB

At the last club meeting members heard the typesetter's talk by Councillor BETTENHORN of Frankfort, kindly lent by Mr. LAMMOND. All agreed that this was one of the best talks they have ever heard, and voted for more of the same.

Activity on 40 and 80 m. has continued at a steady pace and those non-members who are interested should seize the opportunity to increase their number of contacts for our Honorary Certificate of Membership. Don't forget to ask all your VK3 contacts: "Are you a member of the Moorabbin and District Radio Club?"

Meetings are continuing on the third Friday of each month by courtesy of JEM at 267 Jasper Road, McKinnon.

QUEENSLAND

At the Council meeting held as usual at the Y.M.C.A. rooms in Edward St., members approved the purchase of parts for the six v.h.f. "Communicator" being constructed by selected members of the V.H.F. Society. These parts, it is anticipated, will be used in future emergency runs and will provide a workable basis for a stock-pile of suitable v.h.f. emergency gear for the Queensland Division. Provision is also to be made for v.h.f. operation at 40 W.L. and 80 m. with added improvements put in by Bert 4ZAE, will then permit operation on five separate channels.

Some spade work was put in by Alan 4ZAE and Ron Cartledge digging out all the information about the Old Observatory in Wickham Hill, which was built in 1880. This building was once used by Tom 4CM and the late Dr. McDowell for t.v. experiments in the late 1920's. In considering its past radio history, its location and its value as a well known landmark, it was thought that it would make a fitting city hideaway, where at least Council meetings could be held. This proposition was put to a Council meeting where it was favourably received and an approach is now to be made by our President, John 4FP, to the City Council-

cl regarding the acquisition of the Old Observatory.

The Xmas Party is now organised and is scheduled for the second Saturday in December. Keep the date in mind and watch "QTC" for details. The last party was down a bit in attendance figures so this year give it your support and come along. A good time is assured.

All cards to be handled by the QSL Bureau may be sent to D. B. Hughes, C/o, P.O. Clontarf Beach, Clontarf. A rapid service is assured.

The general meeting at the State Service room, Victoria Park, was a good turn-out of members to hear Everett 4AL give a very informative lecture on "Mass Production of TV and Electronic Equipment." The processes involved were "eye openers," and the boys throughout enjoyed the evening. A vote of thanks was passed to Everett by the President.

The chairman of the V.H.F. Society, Bruce 4ZRD, reported that quotes had been called for quite a number of items required in the construction of transmitters. At present there is a little delay, also awaiting the necessary 8.6 Mc. crystals. The next v.h.f. meeting will be held at John's (4TR) QTH where these units will be constructed. All interested are cordially invited to attend every third Friday night at 8 p.m. at 4TR's shack.

Bruce 4ZRD put forward a proposal concerning the use of c.w. on 80, 11, 10, 6 and 2 m. by L.A.O.C.P. holders. Jim 4OB then moved that c.w. be permitted on 80, 11, 10, 6 and 2 m. if the applicant has passed a five word per minute test.

It was noted that some items of correspondence addressed to F.E. were not acknowledged and correspondingly an agenda item was formed as follows:

An outstanding correspondence addressed to F.E. was supplied with a copy as to what action is taken bi-monthly.

The last 2 m. hidden tx hunt was again won by John 4FP who, assisted by his usual navigator, found the tx just off the Old Cleveland Road in the bush at the end of Promenade Road. Bill 4VW had the gear nicely hidden, having cunningly parked his car with covering beside a parked caravan. Quite deceptively nice going Nick!

TOWNSVILLE

How is that so many chaps can forget the last Thursday night in the month, which is the meeting date of the club? At the last meeting there was only a few of the stalwarts present. The Secretary tendered his apologies in advance for the next two meetings because of shift work.

John 4DD has now his voice back and punishing the 10 m. band calling CQ. Ted 4EJ almost had two thumbs on the one hand due to an accident at work when he split the member on the guillotine. Glad to hear it is making well and is now managing DX activities on 10. Bob 4ZAY and two others are getting up for the morse this time; hope they are

successful. Len 4GD and Eric 4KL get in cabs around the town and try to outcall each other for DX on 10 m. bands.

Graham 4BX, a shadow of his former self, just shows what hard work and plenty of travelling will do in chasing the line noises in the various towns. Come out my way sometime and really hear what the DXers have to say. The Z boys are really getting into their stride for this summer openings on 50 Mc. Japan can be heard most nights. So the QSL Bureau will be overworked this summer with cards.

Frank 4GZ does not now suffer from QRM since Van shifted to new QTH. Owen 4OV, at Mt. Isa, heard making skeds for the boys passing Mt. Isa with their mobile gear. Latest to pass through being Eddie 4QW from Port Pirie, while Frank 4GZ expects to leave for D.C.L. Longreach and will be on to do some rebuilding and give present gear back to rightful owners, cannot take the gear so far away, hi. 4W1 broadcast on 14 Mc. a failure the last few Sundays, even 4W1 only just audible. What is this jealousy in the islands. Frank? Could not hear the full news broadcast.

MARIBOROUGH

4DQ getting a prop. pitch motor to run 4m. his two quads; has been on d.s.b. on 40 m. now building 40 m. for converter for the summer season. 4CB contemplation a h.f. 40 m. beam with vertical elements, i.e. a "GST". Arch is tuning up his 60 ft. wire on 10 DC bands and getting results. 4AL heard on 31 Mc. c.w. Alan has remanaged his new rig yet, so don't expect to see him in a place.

4BG changed his code to 4AB and no longer under-modulating. Getting back on to DX bands after a break. 4B1 of Bundaberg, had bad luck to have his car smashed up just after buying a new one. Vic suffered a broken left leg too, so lost the car and off c.w. for a while. 4LN and 4HZ, of Gympie, also paid flying visits lately.

SOUTH AUSTRALIA

Last meeting heard Maurice Phillips, 5ZU, a technical officer of the E.T.S.A., give a large assembly of members, intending members and visitors a most informative lecture on Communications on High Tension Power Lines, in particular just how this was done over the river and linking Port Augusta with control in Adelaide.

As the basic techniques embody similar principles to some we use each day from less pretentious tasks, the interest was keen, though some listeners were perhaps a bit disappointed. Maurice's theory (he had mentally calculated the weight) of the so-called coupling condensers, which would preclude Ham experimentation of such a system.

As Maurice explained, the need for a system like this was created when the Port Augusta Station output became an appreciable component of the State's generating capacity, so



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the need to effectively control the co-ordination between it and Goborne, as well as the lines between them became of major importance.

Normal voice communication channels, both direct between the two points, together with "party lines" to sub-stations, telemetry for the central control, remote switch operation from control room, subsystems, antenna fault location and alarm, are just some of the things this complex system provides.

It is all done by using the metal conductors as transmission lines, and all at **ultra** frequencies on single sideband, suppressed carrier, modulated or amplitude.

Some of the lurks used to make one crystal provide multiple simultaneous frequencies gave us a few ideas for that self same crystal was controlling both transmission and providing beam steering for receiving.

Transmission line theory came in for its share of eyebrow lifting too, for if any of you have tried to work out these things, will know that a certain gauge wire at such and such spacing, will do such and such. We are provided, it is held firmly and with innumerable splices to do just that, whereas in this high tension line business, the lines are not so controlled, have also to be transposed every now and then, and of course sway quite a bit in the process. The problems attached to the design are quite a few headaches to the designers.

Some excellent diagrams illustrated the lectures, these were thrown on the screen by Gordon using an optical projector. A number of slides and some pieces of the equipment were on display, including one of the hard worked (defunct) crystals. A tape recording of some conversations over the network and the signals used for control were heard to complete the lectures.

John WJC, who moved the vote of thanks, expressed everyone's appreciation of the informative address and thanked Maurice for the work he put into its preparation.

After a short break and a discussion by Norm and Jim, we reverted to normal business, which included the acceptance of the following new members: C. Appelby, 5ZEB; B. H. Wall, 5ZCA; K. D. Halsted, 5B5; and Associate, B. G. Daw, G. J. Klipper, W. Gees, Coxon. The fellow members, pleased to have you with us.

Following some discussion the deferred action from the previous meeting re the Sub-Division Subscription to I.T.C. was put to the meeting and a sum of £2.00 from fund was authorized. Correspondence came along now so John had but one letter to read out, with Federal Councillor Rex left to do most of the talking.

Two former operators now South, who lived and operated in Northern Territory, for some time, had an idea to set up a station for VK3 for that area and it was decided to set the ball rolling via F.E. to see what could be done.

Gordon EXU spoke of the need to watch operation and have nothing to do with pirates, these being bad examples to receive and to give the notice of the Advisory Committee.

Reference was also made to the need for suppression of harmonics and advising anyone in doubt or in trouble to contact the technical committee who, under Max SBT (phone LF 5928), are available to help, and indeed are formed for that purpose.

At the conclusion of the meeting your scribe was "invited" to take Doc home (he was about for once—too wet to bring that nice shiny gear up) and so we got up and made our way to the other navigators from Gowler and set sail for the Big House. This entailed going down Currie Street and turning into West Terrace where the multiplicity of road marks and light posts it is impossible to concentrate on, so had a hair turn to be made but having so many navigators on board we just approached the corner with nothing more serious than about four instructions on how to do it! Result? Shot straight through without turning a hair, and arrived at the Big House, nearly so! The rude remarks of the four navigators and what they would have done cannot be written, only acted, and as we are not on t.v. we leave it to you from there.

Tony has devised a new way of getting to his Malvern office from the home QTH. He dresses to resemble a schoolgirl and can thus travel on a special bus dropping him off at the door. An apple each day for the teacher also helps. Argumentative bairns is Tony, or better him, along with Gordon EXU, the Hebrew or Gaelic ancestry of a member who was querying a value of something or other.

Lance EXL reports interest again awakening in breast of John SFT, as well as himself and others, and resultant activity on the bands. Keith SKH seems to be on the phone recently, very nice too, watch out Keith they will keep you up all night on that band.

Jack SAM working on a new triband cubical quad, using a very novel way of obtaining correct size and spacing and all on an 8 inch

boom. You must do an article on that Jack, for it is a winner and answers most of the queries. You said it wasn't original, but don't let that prevent you from putting pen to paper.

Joe SJO still in hospital and general condition causing some concern. He will have to go quite a while.

Wal SDF has put the key away again since the new modulator came good and is now back to normal. Keith SMT, temporarily at least, confining activities to the d.c. bands during a transitory period following change in QTII and some travel. — — —

WESTERN AUSTRALIA

After the usual business had been disposed of at the last monthly meeting, SRM and SKW took the floor to deliver lectures. Ron showed how simple additions to the modulator will allow a high level of modulation to be run without a loss of stability. He also referred to other stations. Wal told of the fun and games he had in obtaining stable operation of his 606s on 23 Mc. He described the circuit he is now using to neutralise his final. This consists of a bridge circuit, which can be adapted to fit any tube.

Sunday 21st Sept., Wally and Mrs. Coxon entertained Council members at their home in Darlington. This meeting is usually held close to Xmas, but as the weather is generally unpredictable, the date is varied. Wally and his XYL decided that a much more pleasant day would be had about this time of the year. We are indebted to Wally and Mrs. Coxon for a most enjoyable time.

The 40 metre scramble had a record number of participants this year, the being 90 stations on the air; this included one which was not worked by anyone to my knowledge. It sounded as if this particular station was keying g.d.b.s. I couldn't get the call sign, anyway; there was no call sign frequency, either! Myself? Winners were 5RU (city), 5TH (country), and 5KJ/P (portable section). I decided to come on at the last moment and thus cause some snappy operating on the part of all stations. However, the operators seem to know all the stations on the air at the time. With one exception, were worked apparently. That particular station had the same idea as I did. Idea of coming on for the last five minutes only next year have been scrapped after listening to the descriptions of the skyhooked stations which awaits me should I carry out this plan!

Found SBO feverishly welding a paint roller in his lounge room the other day. Bob appears to be equally at home with bricklayer's trowel, hammer and saw, or paint brush as with a stick of chalk. Believe me, most building operations are scheduled to start soon.

5TH has been heard muttering darkly about SBE5 mixers and sideband filters, so expect he is going to give a.s.b. a try, as he has been threatening to do so for some time. SCA has made it to 80 m.w. by means of a No. 19. Nice to see you on the band, Kerry. 5DW has been transferred to Perth and is taking up residence in James St. Bassendean. Three of 'em in one street! Believe it or not, now there are six houses built and another at that!

Much feverish activity among several of our Z boys, with Morse sessions, etc. It seems that some will be applying for the full ticket in the near future. Chuck has got his receiving set-up working and is expected back on the air. Chuck is another who has been busy house-building, and has had no time for Ham Radio.

Would like to remind you that this State is lagging in I.T.U.C. contributions. The time is fast approaching when the delegate will be instructed to withdraw from over 100 countries in the U.S.A. re proposed changes in frequency allocations is most disturbing. The Ws have already lost exclusive use of v.h.f. bands 220 up. No matter whether your interest is in DX, rag-chewing, amateur bands, or own State, or in experimenting on v.h.f., it is important that you make your presence felt at the approaching convention, through your own representative. Incidentally, if your contribution has not been acknowledged through that magazine, don't be worried. Some doing in forwarding cards from our I.T.U.C. to F.E. is unavoidable.

TASMANIA

NORTHERN WESTERN ZONE

Our usual bi-monthly meeting was held last month with really a good muster of members. Three visitors were welcomed with hopeful invitation to become members. Our zone strength is growing rapidly.

General business was rapidly disposed of, followed by the regretted resignation of our President, Ted TEJ. Ted is moving to Hobart and words of thanks and appreciation for all he has done in the zone were spoken by

several members. He was also wished the best of everything by all. Lee TEKC was elected to fill the vacancy—best of luck, Lee.

Donations to the I.T.U. Fund were again "plugged" by the Secretary and President; I trust the required results will be obtained. Applications were brought forward to continue instruction for Associates and it was decided to hold meetings in alternate months for such purposes. An activities committee was appointed to arrange lectures, etc., also displays on amateur equipment with suitable orations on their expectations.

It was decided to place a "live" exhibit in the Burnie Chamber of Commerce Hobbies Week Exhibition. Burnie members have it all under control. Some associates sat for the A.O.C.P. examination last month and are still anxiously awaiting results. Keep your fingers crossed for us!

Some of our YLs and XYLs walked on us once more with sunburn and their labours were much appreciated. Also I think they enjoyed the fun of the auction which followed. Ted did a really first class job for his last run another auctioneer will have to be found) and Zone funds showed a further gain.

Sam 7SM reported that he now has only one more 500 watt 500 ohm 500 m.w. W.A.S. G. Carter, SOT of the last straw, ch. Sam Peter YPF, who I believe is doing a spot of QTII juggling, hopes to be on the air soon on 3 m and also on the lower bands. He had a 3 m converter and tunable i.f. at the meeting. The committee sold the goods on a baking dish for a chassis.

Listening on the various bands indicates that Spring has brought a lot of members out of Winter hibernation. There shouldn't be any trouble getting contacts now.

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FOR SALE: 1 RAX Receiver, 7-27 Mc., £18. 1 home-brew Q5er to suit same, £10. 1 RAX 0.3-1.6 Mc., £16. Bruce McCubbin, 3 Kildare St., Burwood, Vic. BW 1587.

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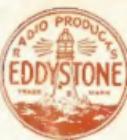
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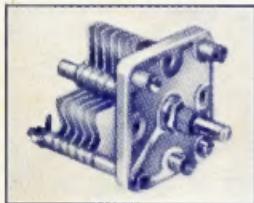
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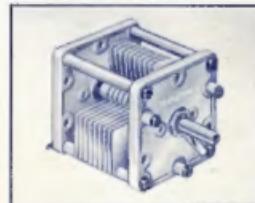
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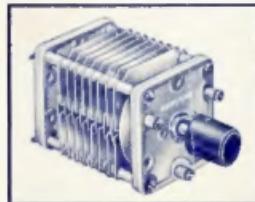
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Cat. No.	Type	Capacitance (pF.)		Proof Voltage	Air Gap (ins.)
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833	Split-Stator	18	97.4	2,500 per sect.	0.080
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